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GM **CODES!**
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The National Locksmith®



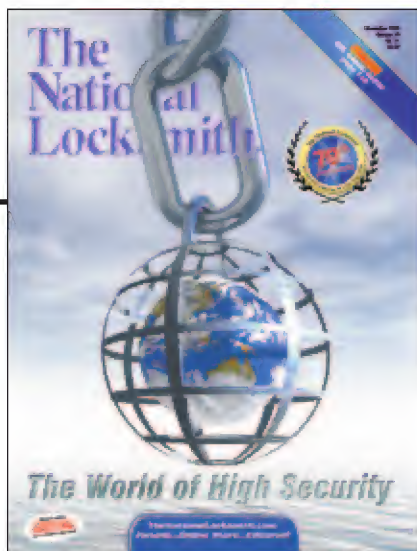
The World of High Security

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On The Cover...



Three of the top security manufacturers talk about the present state of high-security and what we can expect in the new millennium.

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COMMENTARY



"Fear."

It's not a happy word. Fear is not a feeling that makes you feel good in your life or in your work. We encounter fear in all aspects of life, however. I suppose that it is just part of the human experience which we all share.

In our professional lives, we also sometimes become fearful. And fear will stop you in your tracks if you let it. Probably the greatest fear is of the unknown. If you have limited experience working on foreign cars, or on safes, for example, then when a job is offered, you may be too fearful to accept.

For a locksmith, fear can cost jobs, income, and profits. Worst of all, fear can stop you from learning new skills which could benefit you in the future. I am going to tell you a secret now which I have learned over my sixteen and a half years as your publisher. Fear can be either a destructive force or it can be a helpful tool.

If you allow fear to stop you from progressing, then it will set you back in your life. On the other hand, if you let fear motivate you to move forward, it can actually compel you to go out and learn new things that can become important to you for the rest of your life, personal or professional.

The phone rings and you receive a call to make keys for a vehicle that you are not very familiar with. You've got two choices. You can either turn that job away because you fear that you do not possess the knowledge to complete the work. Or you can accept the job, and reach out for tools to turn this into a valuable learning experience.

In today's world, the options for help are more numerous than ever before. Books and training manuals are various and they contain more hard won knowledge than locksmiths even a few years ago would have believed possible.

Also, the internet connects us together so that we can actually help and advise each other when we need help. I am constantly astounded by the quality of information locksmiths share with each other in the forums at TheNationalLocksmith.com. I have seen 'smiths post a question asking how to do a job which confuses them and receive excellent answers, sometimes within a matter of a couple of hours.

Fear makes us feel alone. But having access to trade materials, magazine, and your fellow locksmiths on the internet can give you the sense of connection to help, which you need to be able to face down your fears of the unknown.

President Franklin Delano Roosevelt was famous for his wartime speech in which he said that all we have to fear is fear itself. Perhaps truer words were never spoken. Next time you find yourself reluctant to take on a new task, ask yourself if fear of the unknown might not be part of the problem. If that is the case, then take a deep breath, and reach out for answers. That is the solution.

Marc Goldberg



**Have questions? Want free technical help?
Free Locksmith Forums!**

www.TheNationalLocksmith.com

Marc Goldberg
Publisher

November 1999 • 5

Mango's Message

This month I'm going to do something a little different. Rather than spew my usual prose about any one topic, I'm going to throw out a hodgepodge of information gathered from numerous sources. I'll liken it to the 10:00 news where no single topic will last more than 90-seconds. This format has always intrigued me because you can't possibly learn all there is to know in 90-second sound bites. Yet through years of refinement and conditioning we have come to accept this means of worldly news and information as if it told the whole story. I only wish I could have earned a college degree this way.

Embezzlement Charges:

The North Carolina *Asheville Citizens Times*, reported a story of a locksmith that was caught with his hand in the cash register till. A warrant is on file in the Buncombe County Magistrates Office, which charges Kenneth A. Pace, with one count of embezzlement of over \$3000 from Asheville Lock, Inc, in Asheville, NC.

I spoke with Tony Roberson, owner of Asheville Lock, Inc. who said that once he suspected money was missing, he installed a CCTV and recorder focused on the cash register. After enough recorded evidence was gathered indicating that Pace was in fact skimming from the till, Roberson pressed charges. Pace was ordered to pay back \$125 in restitution, which was all Asheville Lock could recover because that was the amount caught on tape. Pace was freed on an unsecured bond after his conviction.

Pace is an ex prison guard from Craggy Prison in Asheville, N.C. and a 15-year locksmith veteran. This is just such an individual that should not be in this trade, however, Pace is back in business for himself as a mobile locksmith.

Automotive Lock Pick Set:

John's Custom Products from Las Vegas, Nevada is offering an adjustable all-in-one double-bladed roller pick. According to the manufacturer, the pick is designed with two reciprocating blades, which offer an infinite amount of adjustable key code possibilities. By rolling a wheel placed between the handle, the blades move in and out to a new location, resulting in various space & depth configurations. The rotating wheel allows the user to continually change the rake configuration without thrusting the pick in and out of the lock.

There are two pick configurations available; one for single-sided wafers and one for double-sided wafers. According to the

Bits & Pieces

manufacturer there is an 85% to 90% chance that one of the two picks will operate the lock. And for the low, low introductory price of just \$169.95 both picks can be yours.

There are a number of other claims that are made, but the bottom line is the Adjustable all-in-one, double-bladed, roller blade, rake pick (which doesn't even make a good tooth pick) is junk! In fact, it's a scam, man!

I did an editorial on this product some time ago and it's back with phone solicitors calling interested parties like; tow operators, automotive service centers and you.

Scottish Locksmith Boasts: "No Jail Can Hold Me"

A master locksmith facing a jail sentence for drunk driving claims prison bosses will have to change the locks and keys every week. A Glasgow locksmith, Alex Minty, told prison chiefs, "You'd be as well to leave the cell door open because there isn't a jail that can hold me! Minty is facing a jail sentence after receiving his seventh drunk driving charge and may also lose his locksmith license.



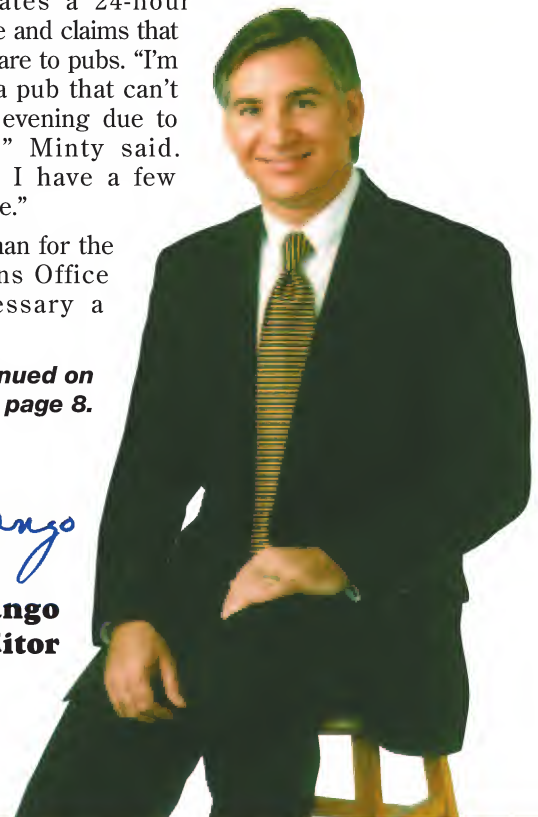
Minty operates a 24-hour locksmith service and claims that most night calls are to pubs. "I'm often called to a pub that can't lock up for the evening due to broken locks," Minty said. "Unfortunately I have a few drinks when there."

A spokeswoman for the Scottish Prisons Office said: "If necessary a

Continued on
page 8.

Greg Mango

**Greg Mango
Editor**



Mango's Message

Continued from page 6

prisoner can be kept in a high security environment. Most have computer-controlled locking systems. It's not simply a case of picking locks anymore."

That didn't deter Minty, he went on to say that he will have to be locked in his cell for 23-hours a day because he will teach the other inmates how to escape as well. "It's easy, Minty proclaimed, all I need is access to the metal shop.

Sounds like a story for Heraldo Riveara.

Consumer Information Catalog:

The U.S. General Services Administration Consumer Information Center, publishes information booklets on a variety of topics that is available to all. Sample topic categories are: cars, parenting, education, employment, Federal programs, food, health, housing, money matters, small business, travel and much more.

Most of the booklets are free. Others range from an average of .50 - \$2.50.

To receive a free topic listing booklet call: (888) 878-3256, Fax: (719) 948-9724 or search by Internet at www.pueblo.gsa.gov. There you can view the full text and order printed copies of all the publications listed. You will also find the

text of many other valuable consumer publications, consumer news and links to other helpful web sites.

Forensic Frenzy:

The first annual Forensic Sciences and Crime Scene Technology Conference and Exposition is to be held on May 9-11, 2000 in Washington D.C. The expo is anticipating more than 3,000 attendees and over 125 exhibitors in 250 booths.

FRENZY is the only comprehensive forum that unites the various disciplines within the forensic sciences, law enforcement, civil and criminal courts, private laboratories, the fire service, arson investigators, insurance investigators, corrections, corporate security, government laboratories the military and forensic locksmiths.

For more information call: (203) 445-1224; Fax: (203) 445-1219; Web: www.FRENZYexpo.com.

I don't know for sure, but I've always heard that these forensic shows are dead!

So You Want A Day Off

Save this for the next time an employee asks for a day off:

So you want a day off work! Well, let's take a look at what you are asking for.

There are 365 days per year available for work. There are 52 weeks per year in which you already have two days off per week leaving 261 days available for work.

Since you spend 16 hours each day away from work, you have used up 170 days, leaving only 91 days available.

You spend 30 minutes each day on coffee break and that accounts for 23 days each year, leaving only 68 days available.

With a one-hour lunch period each day, you have used up another 48 days leaving only 22 days available for work.

You normally spend 2 days per year on sick leave. This leaves you only 20 days available for work.

We offer 5 holidays per year, so your available working time is down to 15 days.

We generously give your 14 days vacation per year, which leaves you only 1 day available for work.

I'll be darned if you're going to take that day off!

Telephone Etiquette:

Almost everyone in business has to deal with a cranky customer sooner or later, and frequently it's on the telephone. Even if your job isn't designed for direct contact with customers, sooner or later you'll get such a call.

According to Carter Johnson, a business consultant teaching companies how to cope with an irate public, those automated phone systems only increases the callers' frustration. Here are a few suggestions on how to handle cranky phone customers:

- Close your eyes and visualize the cranky caller as someone you respect.
- Focus the conversation away from the two of you and onto a piece of paper. Get a copy of the contract or shipping order and go over it item-by-item.
- If you need time to let tempers cool or find background information, promise you'll call the person back and make sure to keep that promise.
- Listen to the caller without interrupting. All you have to say is "I see" or "Yes" to indicate you are still on the line.

Use the pronoun "I" but never "You." If you start sentences with "I" such as "I hear what you say," you won't be guilty of making accusations.

Johnson goes on to suggest that when all else fails and the customer keeps raging, just hang up. But he says there is even a proper way to do that. If you must hang up, hang up on yourself, not them. Push the button down while you are talking. The person on the other end will think you were cut off and will be less likely to react in anger, or to call you back.

I'm not sure how much I support that final suggestion. I can just imagine that in the middle of a heated discussion with an irate customer that I just... **RL**



Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

A Locksmith Union

In response to the letter about forming trade unions for locksmiths, I think that is a great idea. I am already a journeyman electrician and also would like to be in a locksmith trade union.

I can tell you that you can find the legal information you need to know about them in the United States Code and also about apprenticeship programs. There are also state organizations that govern the apprenticeship programs. This would be to all our benefit as there are also business unions that would help the self-employed to stick together such as the National Electrical Contractors Association which offers training in bidding jobs etc.

In a lot of ways this trade seems to be in its infancy and is spread into a lot of different areas. An organization would help us to grow by leaps and bounds.

Anyone who needs representation

now can get in touch with any local union for representation and advice.

*Charles Osborne, Jr.
Virginia*

Financial Assistance

I'm writing in regards to an ad in The National Locksmith. The ad states Financial Assistance for Small Business. I received in the mail information for a loan package with a fee of \$79.00 for the paper work.

I called the Better Business Bureau to see if I could get any information on them before sending any money, but couldn't.

Could you be of any help in finding any information?

*Robin Robert
Roberts Locksmith
2640 W Catawba Dr.
Harvey, LA 70058-2027
(504) 347-8150*

(Editor's Note: I have no previous experience (nor have I heard) as to whether this company offering assistance does come through or not. If anyone has documented experience with this company, please let us know. I would suggest, however, that since there is a fee involved, I would proceed with caution and ask to be supplied as much information (names, addresses and phone numbers) of others that have received assistance and follow up. If the information can not be provided and verified, cordially decline any further assistance.)

Locksmith Day October 30th

This is to let you know that Governor Jim Hodges of the Great State of South Carolina, at the request of Lee Griggs, President, South Carolina Locksmith



Association, has proclaimed October 30th to be Professional Locksmiths Day in South Carolina.

*South Carolina
Locksmith Association, Inc.
Lee Griggs
South Carolina*

GEICO

In reading the September, 1999 article regarding GEICO, it came as no surprise what was stated. GEICO thought they were going to do the same thing to me even after the customer and I both spoke to their roadside assistance.

In my case GEICO had no contracted vendors in my area. GEICO told their customer to call the nearest locksmith in the area, have the service done, then call them back and they'd give that service provider a PO number.

I submitted the properly prepared and signed claim to GEICO. About 30 days later I received the invoice back with a letter of alleged denial with no reason checked.

**The National Locksmith
1533 Burgundy Parkway
Streamwood, IL 60107
Attn: Editor**

I know the Consumer Rights laws as mandated by the FTC, so I drafted a letter to GEICO telling them what the law was and their obligation to pay. Under the Fair Debt Collections Practices Act of Consumer law, it specially states in this case, and others, that no business entity shall take consumer monies without making good on their responsibility thereof.

If they do take money without supplying the goods, and/or service, that's Fraud.

I got my money!

Willie Bowen
Virginia

Pay for GOA

AAA called me out on a cold and rainy night after midnight in October to open a car door. When I got there, some good Samaritan had opened it and the vehicle was gone. AAA promised to pay for the call. I sent them an invoice for the amount of \$110.00. Well, they kept having me send faxes until I gave up and called it a bad debt.

Now they renege on another payment for \$70.00.

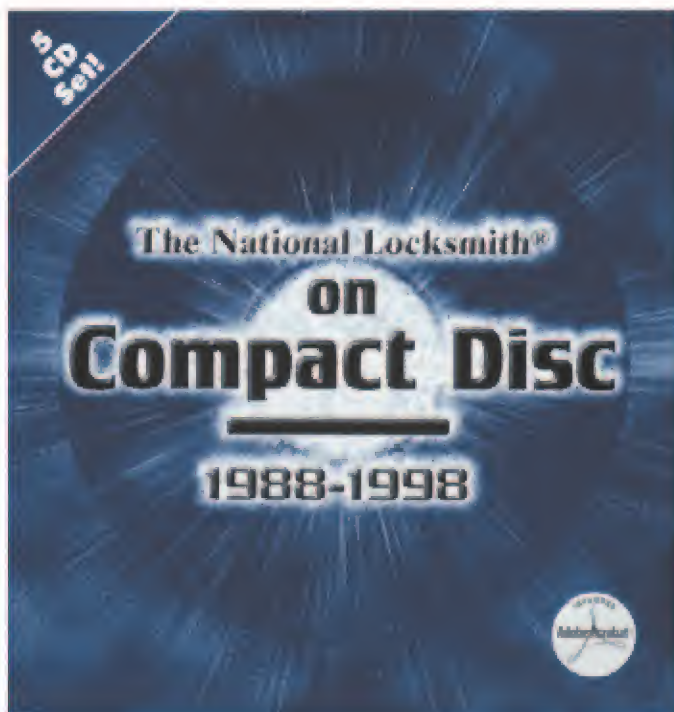
They had a lady call me to open a 1998 Volvo that another

locksmith wouldn't open because it had side-impact airbags. When I got there a AAA tow truck operator who heard about it on his radio was so kind to open it and left before I got there to do the job. I called AAA about it and they said they were sorry about it, but there was nothing they could do.

Well, I think that we can do something about it. We can refuse to do any more jobs until AAA promises to pay for the jobs they send us out on, even if others opened the vehicle. I went out there in good faith, so they should pay me and be more careful in the future about sending more than one person to open the same vehicle.

Ralph E. Van Norman
California

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Thrill of a Lifetime

I would like to let Carl Cloud and you know how much I appreciated your article on drill transferring in the July issue of *The National Locksmith*. I work part time as a locksmith, hoping to get more involved as I can. I am very interested in safe work. The owner of a company gave me a small cash drop safe with no combination. They had taken out of a grocery store. It was an A&B safe with a LaGard 1800 three wheel.

The dial had been pulled and the dial ring was loose. I reinstalled the ring and tried my hand at manipulating with no success. I decided to drill. I guessed the drop-in to be at 97. I decided to drill at 97, 7/8" from center of spindle, but the mounting hold for the dial ring was at this point, so I moved from 97 to 90. Because the door was of mild steel and only 1/2" thick, it took about ten minutes to drill through the door, using a 1/4" cobalt bit. I then lined up the gates and using your transfer method with vise grips, a flat piece of wire, and a sheet of paper, transferred the gates and the lock opened the first time.

This was a great thrill for me, as this was the first time I have drilled a safe. I am looking forward to more of your articles. Thank you very much,

Claude Wilborn
Kentucky

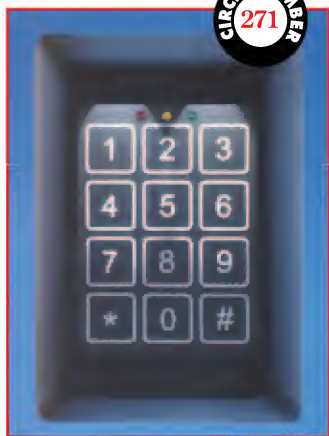
TNL

Security Café

**DROP IN FOR
TOOLS, TECHNOLOGY
& EQUIPMENT**

Baran/Tec Adds Deluxe Illuminated Version

Baran/Tec has announced the addition of a deluxe illuminated version to their range of field-proven access control keypads. Everswitch™ keypads, the deluxe illuminated version is designed to resist tampering and vandalism, while providing a user-friendly, brightly-lit keypad surface for ease of use in any low-light or no-light environment. The unit is able to accommodate up to 200 individual users, each having between a four to eight digit password for a total of over 100 million potential combinations. With no moving parts, Everswitch™ is impervious to harsh environments, including water, dust, sand, snow, and chemicals. Keypads will operate even if submerged in 30 feet of water or covered with ice. Operating temperature range is -40°F to +257°F.



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The Jet TKD-1

Jet Hardware is offering the most affordable new TKD-1 transponder key detector on the current market. Basically, it simply says, "Yes" or "No". This is

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Marks USA "Override Guard"

All Marks USA Protector Series mortise locksets feature an "Override Guard" which is designed to result in spindle failure when



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torque of over 550 foot lbs. is applied. Lockset remains locked and when spindle is replaced, lockset is fully operational. Protector Series locksets have a lifetime mechanical warranty, meet or exceed all operational and security tests of ANSI A156.13-1994, Grade 1 and are UL listed for 3-hour fire rating.

a must for all key duplicators to determine if a customer's plastic head key is or is not a transponder. It will eliminate ruined keys and most important, insure that the key being operated in a customer's automobile is correct, thereby eliminating any damage to their security system.

Trimec ES110 Low Profile Strike

Trimec, the manufacturer of the original low profile strike announces the ES110 low profile electric strike. The ES110 accepts a 3/4" latch, offers 3000lbs. of holding force, and a field reversibility from fail safe to fail secure in 45 seconds, all in a strike that is just 1-1/4" deep. The ES110 has surpassed UL1034 at the highest standards for burglary resistant electric strikes, and comes with a 3-year warranty.



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Hard to Find Change Keys from Lockmasters®

Lockmasters® is now offering change keys for combination locks that, until now, were obsolete. These change keys are machined from steel unlike others on the market, which are soft, die cast keys and are easily broken. The change keys fit snugly into an anodized aluminum handle and can easily be interchanged. The change keys offered are the following: Mosler 302-402, 1132 Time Delay, 1830 Vault Lock, and 120 Series; La Gard 2050 Vault Lock; Diebold 177 Series, 180 Series, and Sargent and Greenleaf 6720 and 6721 Series.



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Doorking's Secure Rotating Code RF Controls

Doorking's MicroPLUS™ "Rotating Code"

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RF access controls offer users the security of a fully pro-programmable card reader system, but with the safety, range and convenience of RF transmitters. The rotating code feature in this product line causes an encrypted sync code in the transmitter to change each time the button is pressed. If a transmitter code is copied and then re-transmitted in an attempt to gain entry, the companion MicroPLUS™ receiver will not allow access because the sync code will no longer match the coding in the receiver. Unlike other unsecure RF access devices that simply transmit the same code over and over again, the encrypted sync code in the MicroPLUS™ product line provides a secure RF transmission and assures that copied transmitter codes are virtually useless.

The MicroPLUS™ product line includes three different receivers to meet most access control requirements. The 8054 is a fully programmable receiver designed for stand-alone applications. The 8055 is a basic stand-alone receiver and is typically used for residential type applications. The 8056 receiver is designed to interface with other access controllers and outputs the received transmitter data in 26, 30 or 31-bit Weigand format.

Schlage New Rapidkey Software

An enhanced Rapidkey™ program, by Ingersoll-Rand



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Architectural Hardware's Schlage Commercial Lock Division, provides many new features that include Windows 95/98 compatibility, Multiple database capability, easier-to-use help screens and configuration menus, and the ability to manage a wide range of time and user access functions. Designed for use with Schlage's e.Primus Stand-Alone Electronic Access System, the new Rapidkey (version 3.0) expands the potential applications for the e.Primus system, with greater ease-of-use. It offers many new benefits for applications in schools, hospitals, offices, stores, and other facilities needing more sophisticated key control.

The LA GARD LG Basic

LA GARD, Inc. has announced the introduction of the lowest priced electronic locking system they have ever offered, the LG Basic. Equipped with a non-volatile memory, the LG Basic will not lose its combination the battery is disconnected it suffers a power loss. The lock is powered by a 9-volt alkaline battery and includes a warning signal when the battery is running low. Another feature of the LG Basic is the "wrong try penalty". This feature engages when a person enters the wrong combination after a certain number of times. This will activate the "time penalty" and not allow the user to operate the lock until the penalty period has expired.

Master Lock Interchangeable Core

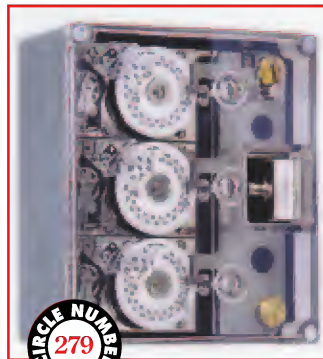
Master Lock Company introduced its Interchangeable Core System (Master Lock IC) offering facility managers full keying capabilities ready to use with their existing IC door security system. Facilities now using interchangeable core products for access security will find Master Lock IC a perfect fit in both compatibility and affordability. A Master Lock core fits any standard Best®, Falcon® and Arrow® interchangeable core door lock. Master Lock's full line of interchangeable core padlocks, mortise and rim cylinders also accept present cores from these same brands. The new core options give facility managers and maintenance personnel an instant solution for common security issues. Any authorized person using a single control key can remove an interchangeable core and replace it with a spare or recombined one, resulting in a new level of convenience and key control. Master Lock also offers door key compatible systems (for doorlocks that don't use IC cylinders).



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ILCO 643 Time Lock

The Unican Lock Division of Ilco Unican introduced the 64 Series Time Lock. The case is constructed of all metal with a full-face cover of clear acrylic. The 64 Series Time Lock is available with standard movements, reset movements, reset with accelerated action



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movements or the electronic movements featuring audit trail. Traditional mounting hole pattern and case dimensions with optional inserts for 1/4"-20 mounting bolts make for easy fitting or retrofitting.

Videx Access Products

Videx announced an intelligent lock that provides a comprehensive audit trail. TouchAccess™ can be easily installed on file cabinets, storage containers, toolboxes, and anywhere that controlled entry is desired. A record of every entry, closure and denied entry is stored in TouchAccess, and can be immediately transferred to a Palm™ organizer upon request. Each authorized user is issued a touch memory key that contains a unique ID number. Each time the authorized user opens and closes the TouchAccess lock, their user ID number is stored along with the date and time of the event. Since TouchAccess incorporates a mechanical lock, it does not permit unauthorized entry. If forced entry is attempted, a local alarm will sound, alerting everyone in the surrounding area.

TouchAccess can be programmed with up to 524 authorized user keys, and stores the most recent 526 events. TouchAccess is programmable with user-defined access times,

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allowing management to establish at what times and on which days an authorized key holder has access. The TouchAccess lock transfers its stored data via an IR connection to either the PalmIII™ or PalmV™ organizer.

STI Mini Bopper Stopper®

A super-tough hinged cover to protect keyless door lock units is available from Safety Technology International, Inc. This durable little device offers protection from the elements for all keyless door lock units, even those with a weatherproof keypad. Ice and heavy snow can make them difficult to operate. The Mini Bopper Stopper also does a good job in helping protect all these units from physical damage-as well from the ravages of the sun sand and such.



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To assure continued protection in extreme conditions, the STI cover itself and even the hinges are molded from polycarbonate. The spring for the hinge is formed from stainless steel. It comes complete with gasket and installation screws. The cover is backed by a lifetime guarantee against breakage in normal use. **STI**



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COVER
STORY!

HIGH-SECURITY ROUND TABLE



This month we are going to take a close look at the world of high-security manufacturers. Normally, we would examine a variety of products offered in this market segment. However, we decided to take a different approach with this article.

So much has been happening related to high-security, that we decided to go right to the source of the issue, and talk directly to several manufacturers. We submitted questions to them, which they have answered. This interview approach will help all of us better understand what is happening right now, and what the future may hold for the sales of these products.

ABLOY Construction Locking

Offering some of the most secure and versatile high-security products in the world

Recently the ASSA/ABLOY group announced the consolidation of ABLOY Construction lock and ABLOY Canada Inc. into one large assembly with a sales and marketing facility in Montreal with more than thirty years of ABLOY experience.

This newly named division is called ABLOY Door Security. This division specializes in marketing the complete range of ABLOY products to the locksmith and their distributors right across North America.

The ABLOY Disklock PRO product range is one of the most secure and versatile high-security lines available in the world today. It incorporates the patented disc controller to prevent the discs from rotating until the key is fully inserted, a newer very user-friendly design.

The patented rotating disc cylinder mechanism (invented by ABLOY in 1907) offers the maximum pick resistance, patented keyways, resists wear and is virtually trouble free.

Added to the above is a complete range of products that include maximum security tubular deadbolts, completely hardened mortise/rim cylinders, a full range of key-in-knob/lever retro-fit cylinders (fits all major manufacturers and functions), cam locks, cabinet locks, switch locks, rim locks, key deposit locks and the complete range of ABLOY high-security industrial padlocks. All the above product operate under the "one key fits all" system.

The ABLOY Disklock PRO key is reversible, can be stamped, incorporates a colored ID system in the key bow and requires a special key machine to machine the angled cuts (not depths like a pin tumbler). The key shaft is made of nickel silver for strength and longevity and the key bow is made of a non-breakable plastic composition.

The Master of Master keying with two billion combination possibilities and the most useable combinations in the lock industry, we can create even the most complicated of Great Grand master key systems (7 level +) along with central keying (maison) and cross keying sections. Many large industrial and institutional complexes in North America have chosen ABLOY for their high-security system.

Excellent service, Abloy is committed to offering clients the best service available in the lock industry today. With quick shipping, knowledgeable customer service staff, free master keying and consultations along with roll free phone and fax and reputable distributors coast to coast.

Q: How does the locksmith factor into your distribution scheme?

A: The professional locksmith is our most important channel to end-users in both USA and Canada. In fact ABLOY Disklock PRO product line is available only through our exclusive locksmith dealer network which is supported by locksmith distributors throughout North America.

Q: How do you see your distribution channels changing over the next ten years?

A: We will continue to grow our business over the next ten years by selling our product through our expanding distribution channel, the locksmith and their locksmith distributors. We believe that our locksmith distributors provide a vital part in this growth by increasingly providing excellent service both locally and nationwide. We have confidence in our existing distribution channels, which will continue to grow over the next ten years.

Q: What new product lines do you have coming in the future?

A: Our existing range of ABLOY Disklock PRO is already one of the most complete and versatile high-security lock lines available anywhere in the world today; but we will see the addition of new products over the next year, unfortunately we cannot provide additional details at this time.

Q: Discuss the differences between mechanical high-security and electronic security, and does one affect the other?

A: We can agree that there are places where either may offer a level of security required for a particular application and often they compliment each other. Certainly the mechanical high-security lock with a patent protected key can offer truly high-security by restricting access through pick resistance, master keying and the inability to obtain unauthorized duplicate keys, along with good resistance to a force attack, and provide this at a reasonable price. What the mechanical high-security lock alone cannot offer is any form of audit trail (who entered the door and at what time) or the flexibility in restricting access through a door by these same factors.

We often see a combination of both in many facilities with limited use of the electronic aspects due primarily to initial

costs of the electronic product and often the high cost of installation (usually with hard-wired systems). Even in electronic security systems virtually all protected areas will have a mechanical key system in use in products such as mortise lock cases and/or key-in-knob or lever locks for the individual doors and exit devices as well as acting as backup to the electronic system in case of failure. Electronic security can be more convenient and flexible than mechanical security but electronic could also be less physically secure than a mechanical high-security system. So we see them as often complementing each other.

Q: Do you foresee high-security mechanical locking devices ever being used in larger numbers in the residential market?

A: Yes, over time people will become more demanding in that the locks that protect their loved ones and belongings should do more than just keep honest people honest, as is the case with most non-high-security locks. In fact one of the roles the professional locksmith plays in this situation is using their knowledge to act more as security consultants in educating their clientele about the real benefits in high-security. These benefits include a much more sophisticated cylinder mechanism to increase pick resistance (increasingly a threat), a controlled key with patent protection (prevents unauthorized key duplication) as well as the increased resistance to force attack that high-security locks provide through the use of better designs and materials such as hardened steel bolts rather than brass. Also there may come a time soon when insurance companies will demand that people install an approved high-security lock from an approved professional locksmith. They may even offer insurance premium rebates to people who use high-security locks on their premises whether it is residential, industrial, and/or commercial.

The formation of The High-Security Manufacturers Council (HSLMC) with its mandate to educate the public on the advantages of using high-security locks not just for industry and Government but also for the residential market will also have the effect of creating demand for high-security in these markets in the foreseeable future. We firmly believe that high-security lock sales to the residential market will be increased dramatically in the future and it will have to be driven by both the locksmith and the high-security lock manufacturers efforts along with the HSLMC.

Q: With the number of affordable electronic locking devices not available, how great of an impact are they having on mechanical high-security?

A: I believe there is very little, if any impact by affordable locking devices on the high-security lock market since most of the inexpensive electronic locking devices are "convenience" rather than "security" devices. Many affordable electronic locking devices provide minimal resistance to physical attack or have inherent security weaknesses. The high-security lock market will continue to grow with little effect from the existing affordable electronic locking devices. But we do see that there could be a growing market for both product types in the near future as the affordable electronic locking devices improve on their products to provide better resistance to physical attack.

Q: Do you foresee the possibility of electronic locking devices being the demise of mechanical locks?

A: We see that in the foreseeable future there will always be a need for mechanical locks, if for no other reason

than the price aspect with respect to the security level that can be provided. But the future could conceivably rest with a possible marriage of both mechanical and electronics, which could provide the high-security, and retro-fit capabilities of a mechanical lock combined with the convenience and flexibility of electronic locking devices. The challenge lies in creating this combination at a reasonable price level that will be acceptable to the marketplace. Certainly, one of the largest markets for mechanical high-security locks rests with retrofitting non-high-security mechanical locks systems. This market will continue to grow quickly over the next few years relatively unaffected by the existing electronic locking devices on the market today. Conceivably both will continue to grow since the need for security will continue to grow well into the future.

Q: How can the locksmith sell more high-security hardware?

A: Professional locksmiths must see their role as being a truly "experienced security consultant" to their clientele. These locksmiths must educate their customers as to what benefits can be derived from purchasing high-security locks versus a common lock that quite commonly is of much lesser security. Locksmiths must explain the benefits to having a patent protected and controlled key, how duplicate keys cannot be made without their signature and ID. How high-security uses hardened steel deadbolts that extend farther both into the frame and into the door to resist force attacks such as a kick attack as well as unique precision cylinder mechanisms that will resist picking attempts as well as attacks from such tools as crowbars, hammers and portable drills.

The professional locksmiths must sell professional high-security equipment and become specialists in this market since high-security is only available through professional locksmiths. In fact we encourage the locksmith associations across North America to target the general public through advertisements as to why to call a professional locksmith. We believe that this would go a long way to improving the overall professionalism of the locksmith as well as educating the public that truly high-security is available through locksmiths and not through hardware chains.

Q: Whom do you consider prime high-security targets?

A: Virtually anyone purchasing a lock is a target for the benefits of using a high-security product. But there are many markets today that need special attention mainly due to the immediate problems that they are experiencing. These would include industrial and commercial facilities as well as institutions that have lost control of keys due to unauthorized key duplication. Virtually all these facilities are prime targets since their systems are not protected by patent key systems. The benefits of high-security locks make this a prime market for high-security locks.

Q: What is the most effective way to market high-security hardware?

A: Through education and selling the benefits of using high-security hardware. As we stated earlier, locksmiths have the greatest role to play by educating both their customers as well as the public in general about the benefits of high-security locks.

Medeco Security Locks, Inc.

Making a security recommendation

How many people think of a locksmith as their first choice for purchasing a lock? Not many. In fact, the huge majority of people would choose another channel such as hardware, mass merchants or a grocery store. Instead of giving up and resigning yourself as a security professional to a labor only business, think about why the people who do chose a locksmith do so.

Why use a locksmith to purchase hardware? Professional installation, convenience, range of products, and expertise on the appropriate product are a few of the reasons that a consumer might choose a locksmith. Unfortunately for consumers, many locksmiths assume that price is the most important feature of security, and they give up without even making a suggestion or recommendation. The reality is that many people go to a locksmith specifically for a recommendation. They assume that if a locksmith put it on, it must be the best security available.

Is that always the case? One thing that helps move the locksmith from a service person to a security professional is the recommendation made to improve the customers' security. By making a recommendation to a customer, you are also strengthening the relationship between you. People are more likely to go back to a business where they receive more than they expected. Simply doing the work requested is just what they expected. Making a recommendation to improve their security is more than what is expected.

Medeco works with locksmiths through the Business Development Process to create stronger and more profitable businesses by providing things that the other channels cannot. Contact your local Medeco representative for more information on how Medeco can help you and your employees improve the security of your customers, and increase the profitability of your company by using simply techniques like this one.

Q: How does the locksmith factor into your distribution scheme?

A: The locksmith is a very significant part of Medeco's distribution strategy. Selling high security products is a consultative selling process. To understand the value of high security, the end-user must first understand what risks they currently face. That is difficult to explain with generic words on brochures. We feel that the locksmith (or Security Professional) is the ideal point to transfer that knowledge to most consumers.

Q: How do you see your distribution channels changing over the next ten years?

A: It is always difficult to predict the future, but with what we know today, we don't foresee any significant changes to our distribution channels. Medeco will continue to sell directly to most retail locksmiths as a primary channel. Additionally, to supplement product availability to locksmiths and large institutions, we are identifying some regional distribution partners. These distributors will assist by providing wholesale sales to large institutional installations and to provide a valuable "will-call" function to locksmiths in select metropolitan areas. The addition of these few distributors should provide more sources for Medeco products to retail/commercial locksmiths, allowing them to work either with Medeco directly or our designated distributors, and will fill the needs of the institutional

locksmith by providing more wholesale distribution sources for our products.

Q: What new product lines do you have coming in the near future?

A: As always, Medeco is committed to developing new and innovative products, offering new ways for security professionals to differentiate themselves from other distribution channels. In the near future, there will be significant additions to our mechanical product lines, making them even more appropriate for retrofitting existing hardware in small and large installations. Additionally, we are developing exciting new electronic products that incorporate Medeco's unique dual-function credential. We feel that this credential adds significant value to the security professional by allowing him to offer a "total system solution" to their customers. This access control credential is part of the Medeco SiteLine family, operating both high-tech electronic access control products as well as mechanical high security cylinders. We believe that Medeco takes a unique position in the industry by developing products that offer a migration/upgrade path for existing products while incorporating the same credential.

Q: Discuss the differences between mechanical high-security and electronic security, and does one affect the other?

A: Mechanical high security offers strong physical protection. Electronic security offers the ability to easily change access rights, and to audit activity. The two complement each other and are not exclusive of each other. If you look at the new Medeco EAC products, you will see that our products support the installation of both mechanical high security for strength in some areas and EAC for flexibility and audits in others, and the credential will operate both. We believe that is the future of EAC and mechanical high security.

Q: Do you foresee high-security mechanical locking devices ever being used in larger numbers in the residential market?

A: Absolutely! Insurance companies are beginning to scrutinize claims for burglaries with no signs of forced entry. They could too easily be an "inside" job. We believe insurance companies will begin to play a bigger role by recommending products that provide greater security (and reduce risk) on residences as well as commercial installations. From a purely practical perspective, most people have \$500 to \$1,000 deductibles (or more) on their homeowner's insurance policies. In other words, they're willing to lose that much in case of a theft. Doesn't it make sense to invest a portion of that proactively to keep the loss from occurring at all?

Q: With the number of affordable electronic locking devices now available, how great of an impact are they having on mechanical high-security locks?

A: We believe that mechanical high-security lock sales should increase as a result of the electronic locking devices, but the true result is entirely up to the sales approach of the individual security provider. As we mentioned earlier, electronic access control and mechanical high security devices are best used together. If the security provider understands this and makes the appropriate recommendations, either the electronics will pull the mechanical sales through or the mechanical will pull the electronic, depending on the needs of the end-user.

22 • The National Locksmith

Q: Do you ever foresee the possibility of electronic locking devices being the demise of mechanical locks?

A: No! Openings (doors) are still secured by physical means. Let's face it, the door is a physical device. Even with electronic locking access control devices, you typically use mechanical override devices, so until we find a way to secure openings with "force fields" or something that is currently only seen in the theater, we will still need physical/mechanical methods of securing openings.

Q: How can the locksmith sell more high-security hardware?

A: The answer to this question is often complicated with crime rate statistics and commercial/residential population ratios. It is, however, as simple as this: To sell high security, recommend high security. End-users come to a locksmith asking for a lock, but they really want to feel secure. They think they know what their risks are, and asking for the appropriate product to eliminate the risk, but do they really understand what could happen? It is the responsibility of every security professional to take the time to understand the REAL needs of the end-user, then recommend products that will unquestionably fill those needs. It is not worth risking losing a customer by recommending "compromise" solutions. If a recommendation fails to offer the security the end-user thought he/she was purchasing, it's not likely they will come back to the same dealer to offer a chance to try again!

Q: Whom do you consider prime high-security targets?

A: Primarily, anyone who gives their keys, or copies of their keys to others. They need the key control benefits of a high security solution. Secondly, anyone who has a door in a location that is at risk for physical attack. Obviously this is a vague answer to the question, suggesting the market potential is very large.

Q: What is the most effective way to market high-security hardware?

A: The most effective way to market high-security hardware is to educate end-users on the different levels of security available and the risk associated with each. Most are not aware of the risks that are inherent to common locking devices, and once educated, they are eager to invest in the appropriate hardware to gain the security they thought they had.

MUL-T-LOCK USA, Inc.

*User friendly products, with a
locksmith friendly attitude*

MUL-T-LOCK is a world leader in the high-security locking industry, with subsidiary companies, in the U.S., U.K., Canada, and France. Having established itself in the international market MUL-T-LOCK is taking on the United States market with a full head of steam. In a successful run the company has established itself as the high-security leader in the high-security capital of the world, New York City. MUL-T-LOCK USA's attitude of dealing direct with the locksmith and providing excellent service to the industry has provided its dealers with second-to-none support. Technical and sales support is the main focus of the company and its salespeople. The constant mechanical and sales training are just some of the benefits which all MUL-T-LOCK dealers enjoy. MUL-T-LOCK is truly dedicated to promoting its products through its dealers to the end-user. It is a policy of

the company to have its salespeople assist dealers in selling to large organizations, and end-users.

Branching out through the country MUL-T-LOCK has opened fully stocked branch locations in Dallas, TX, Miami, FL, Chicago, IL, and soon to be Los Angeles, CA. This will enable the company's dealers to receive local and faster support.

With new products like the E and T-Series Padlocks, the retrofit cylinders for Schlage type interchangeable core. Coming soon to the company's product line will be the high-security upgrade retrofit for Best type interchangeable core, which stays with MUL-T-LOCK's tradition of working with the existing keying system. Using the same key with its entire product line has enabled MUL-T-LOCK dealers to provide the end-user with total control possibilities. Being able to key secure areas such as file cabinets, desk drawers, and not the retrofit Best type to the same master key system will now give the end-user total key control with the flexibility of single key access.

The company is always looking for ways to give better service, and give solutions to any and all market needs. In the near future the company plans to incorporate electronic locking into its system. This marriage of electronics and mechanical locking systems will give the user unlimited security solutions for the ever growing need for standard and specialized security systems.

Q: How does the locksmith factor into your distribution scheme?

A: The locksmith is our distribution chain. MUL-T-LOCK USA, Inc. has always sold directly to the locksmith. We have five strategically located branches, which can provide the fastest and friendliest service available in the industry.

Q: How do you see your distribution channels changing over the next ten years?

A: The only changes that we see is the opening of additional branches and the hiring of the best people in the industry to provide the best service to our entire dealer base.

Q: What new product lines do you have coming in the near future?

A: We have quite a few plans for the future. We will be releasing our first interchangeable core cylinder, which retrofits Schlage type housings. We have also released our new line of T-Series, and E-Series Padlocks, and in the coming months we will release a retrofit cylinder for Best type interchangeable core. This will follow the MUL-T-LOCK tradition of being able to work with the same key, as does the rest of our product line. Also on tap in the near future will be the integration of electronics into our system.

Q: Discuss the differences between mechanical high-security and electronic high-security and does one affect the other?

A: There are so many differences between mechanical and electronic security, but they both serve the same purpose "To keep unwanted people out!" We believe that depending on the customer's needs each product has its demand. To talk about the differences would be a 30-page article.

Q: Do you foresee high-security mechanical locking devices ever being used in larger numbers in the residential market?

A: Absolutely, it is happening today in major metropolitan cities such as New York City. People all around the world are becoming more security conscious, and it is the job of all of us in the security industry to provide better education to our dealers and the end-user.

Q: With the number of affordable electronic locking devices now available, how great of an impact are they having on mechanical high-security hardware?

A: The impact is not as big as most people would believe. Again every product has its niche and all this has done is make all of us increase our product lines to answer all of the customers needs and desires.

Q: Do you ever foresee the possibility of electronic locking devices being the demise of mechanical locks?

A: We don't believe so. We have been hearing for years that electronics will take over. After Y2K I don't believe anyone will want to put all of his or her trust into something electronic. There will always be room for the good old-fashioned key/lock system.

Q: How can the locksmith sell more high-security hardware?

A: As a member of the High-Security Lock Manufacturers Council we are dedicated to helping create the demand for high-security products. At the same time we believe that locksmiths are beginning to stop selling products which can be purchased at mass-market hardware stores. When an end-user walks into a locksmith to buy a lock, usually they are looking for the best, why not give them the best. The locksmithing industry is slowly turning into more of a selling product industry, rather than a servicing industry and this is great! There are only 24-hours in a day that you can provide service, but there is no limit to what you can sell.

Q: Whom do you consider prime high-security targets?

A: Everyone!

Q: What is the most effective way to market high-security hardware?

A: As the only security products which people should put on their door, or other application, and the only place which it should be bought at is a certified security professional. It is time that people should be aware that they get \$5.00 security for a \$5.00 lock, and this needs to be conveyed through the manufacturers, distributors, and security centers.

For additional product information on any of the previously mentioned high-security lock manufacturers contact:

ABLOY Door Security, Phone: (514) 335-9500, Fax: (514) 335-0430, E-mail: Abloycan@aol.com, Web: www.abloy.com, circle number 284 on the Rapid Reply Card.

Medeco Security Locks, Inc., Phone: 800-839-3157, Fax: (540) 380-5010, Web: www.medeco.com, circle number 285 on the Rapid Reply Card.

MUL-T-LOCK USA, Inc., Phone: 800-562-3511, Fax: (973) 778-3222, E-mail: MTLUSA@AOL.COM, Web: www.Mul-T-Lock.com, circle number 286 on the Rapid Reply Card.

TNL

Everest

The Highest Peak



by
Sal Dulcamaro,
CML

When I heard about Schlage introducing its Everest product line, my mind flashed back to grade school geography. I vaguely remembered it being one of the tallest mountains in the world, and remember news stories about perilous (and sometimes fatal) ascents of Everest. I double-checked my handy Encarta CD Encyclopedia to refresh my memory. I verified that it was considered the highest peak, and that it was located in the Himalayan mountains between Tibet and Nepal.

The Everest line is the newest patented key control product from Schlage. The value of key control, ultimately, relates to when the key patent will expire. The more recent the patent, the further into the future your customer can maintain key control. Schlage's Everest keys are protected by U.S. utility patent 5,715,717. A utility patent has a 17-year life span. With the patent issued in 1998, it will protect key control until the year 2015.

Schlage's choice of the name "Everest", I presume, was no accident. Comparing patents to patents and mountains to mountains, having the most recent patent is something like being the highest mountain. I suppose some other symbolism can be read into the name, but I won't speculate about that now.

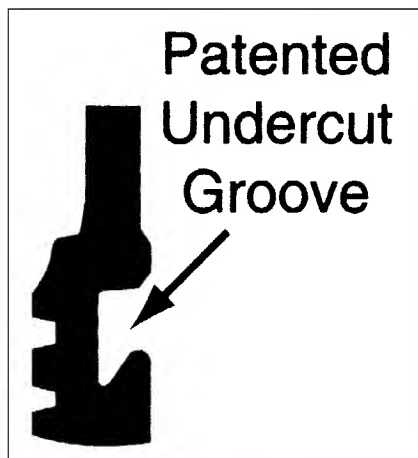
Functional Elements of the Everest Patent

In order to receive a utility patent, your product must have some unique

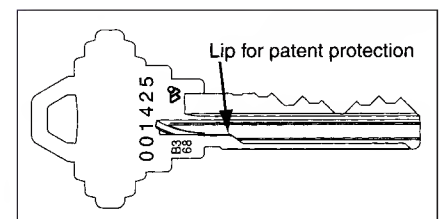
characteristics that distinguish it from the norm. The primary basis of the Everest patent is the undercut groove in the Everest key, shown in *illustration A*. It requires a secondary milling operation to make such a key blank. A side view of the Everest key, in *illustration B*, identifies the lip near the bottom shoulder of the key.

There are two basic types of Everest keys. The one first issued in 1998 is the key control product line designed for Schlage's Best style or small format interchangeable core (SFIC). The other type of Everest key is for the larger or full size Schlage lock cylinders. That includes Schlage's standard size interchangeable core cylinders.

I've made some explanation of the physical features of the key and keyway, but you should remember that a utility



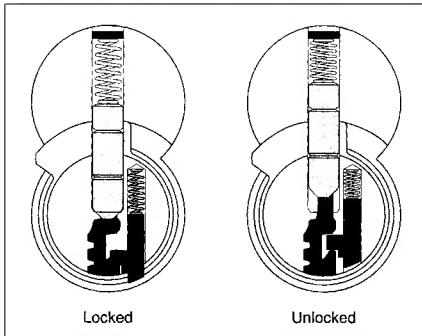
A. The primary basis of the Everest patent is the undercut groove.



B. The lip near the bottom shoulder of the key.

patent requires that the feature must be functional. If the feature was strictly decorative, a design patent would have been issued instead. *Illustration C*, shows the function served by the lip near the lower shoulder of the key (from *illustration B*).

In the locked condition (diagram to the left in *illustration C*), no key has been yet inserted. A blocking pin to the right of the keyway, extends from the plug downward into a hole drilled through the bottom of the cylinder shell. The diagram to the right has a proper key inserted, and it is in the unlocked condition. The normal pin



C. A blocking pin to the right of the keyway, extends from the plug downward.

tumblers are operated in the conventional manner by the key biting or cut pattern.

The unique feature of the Everest key is that the lip near the lower shoulder of the key can lift the check (blocking) pin and disengage it from the hole in the cylinder shell. Without it, the pin tumblers would be raised to the shear line, but the plug could not rotate as long as the check pin locked the plug to the shell.

The two types of Everest keys, small format and full size, operate under the same patent and on otherwise identical principles. There are a number of differences between the two types, and I will explain what they are and why they are necessary, in the next two sections of this article. The differences will manifest themselves in both the keys and the cylinders.

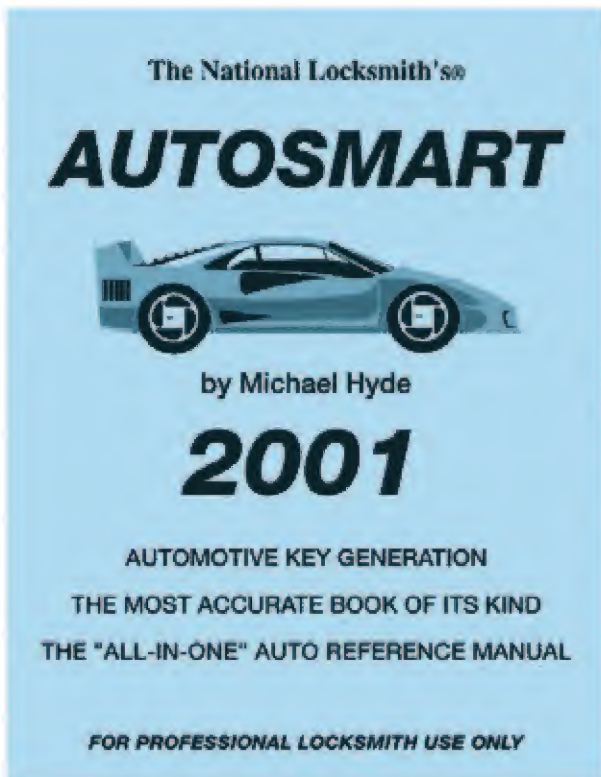
Everest SFIC

Photograph 1, shows a Schlage small format I-Core in its housing, and a pair of Everest keys. Like all Everest keys of this type, there is a lip near the bottom shoulder that lifts the check pin in to allow the plug to rotate. One key is the operating key and the other

is the control key. If you hadn't noticed it in *illustration B*, note that these keys have shoulders and blunt (flat) tips. It is not typical of other brands of Best style cores. I will go into more detail shortly.

Until recently, Schlage did not make cores that were compatible with Best housings (or equivalents of other brands). When Schlage introduced the Everest patented key version of a Best compatible core, it also went ahead with a non-restricted key version. The Everest Best style (clone) I-Core uses the following existing Best (lettered) keyways: A, D, E, F, G, H, J, K, L and M. (See *illustration D*). Although both types of small format I-Cores are made by Schlage (Everest and non-restricted), there are differences in both the keys and cores.

In *photograph 2*, the Schlage Everest small format I-Core has been removed from its housing with the control key. From the side view it looks like an ordinary Best style core, except for the seemingly odd appearance of a Schlage key operating it. Best original cores and most other brand clones will typically use a tip stopped key that has no shoulders. It is apparent that this key is shoulder



AutoSmart

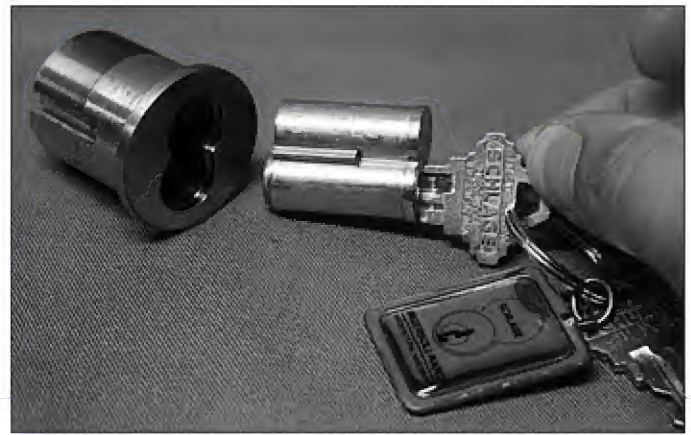
A MUST
for every
locksmith!



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1. A Schlage small format I-Core in its housing.



2. The core has been removed from its housing with the control key.

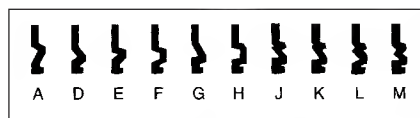
stopped. If you look at the diagrams in *illustration E*, you will see a side view layout of an Everest key on top and a typical Best style key on the bottom.

The different stop surfaces will affect what key cutting equipment will cut these keys. Not only do Everest keys require special equipment because of the shoulder stop, but also because of the deep and wide milling on the right side of the key blade. Schlage sells a special key machine made specifically to cut these keys.

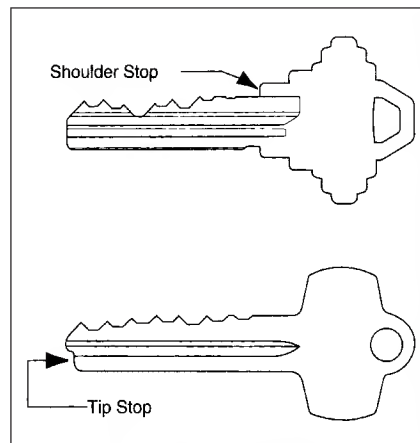
Other code and duplicating machines may be capable of cutting Everest keys, but you may have to modify or replace the standard vise jaws in order to accomplish it. The key machine manufacturer should be able to tell you what is necessary. Schlage's non-restricted keyway small format I-Cores will use standard Best style keys, and they can be cut on all standard key cutting equipment that you now use for cutting those types of keys.

Illustration F, shows the key cut spacing for both shoulder and tip stopped keys. Cuts are referenced tip to bow for both style keys. Schlage makes nickel silver keys with Best's bow shape for that product line.

The primary difference between the Everest and non-restricted small format I-Cores can be seen in *photograph 3*. A bottom view of the core reveals the hole in the cylinder shell where the check pin extends downward from the plug. That hole is located just to the right of the line of ejector tool access holes, and between the face of the core and the pin chamber closest to the face. The Everest key, just to the right of the core, reveals the lip near the bottom shoulder that lifts the check pin to allow a properly cut key to rotate the plug.



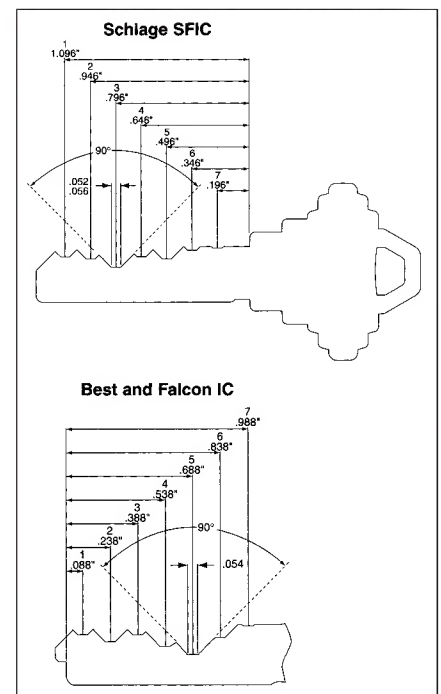
D. The Best style I-Core uses the following existing Best lettered keyways.



E. A side view layout of an Everest key on top and a typical Best style key.

Small format Everest keys and the full size Everest keys have the lip that lifts the check pin in two different locations. While the small format key has it near the shoulder, the full size Everest key has the lip near the tip end of the key. Likewise, the check pins are in matching positions. The full size Everest cylinder has the check pin near the back end of the cylinder, however, they didn't have the option of locating the check pin in the same location for the small format I-Core.

Best style housings have two drive pins that enter two matching drilled holes in the back ends of compatible cores. A check pin toward the back of an Everest core would be directly in



F. The key cut spacing for both shoulder and tip stopped keys.

the path of the drive pins. They had little choice but to locate the check pin toward the face end of the core.

The pin chamber locations are the same for both Everest and non-restricted. You should still be able to use most fixtures or tools that you currently use when servicing Best style cores. The pinning rules are the same. Because of the check pin, the ejector holes were shifted toward the back of the core by .010 inch, although they are spaced apart the same. You shouldn't have a problem with an ejector tool emptying a chamber at a time, but double check before you use a fixture and try to clear all chambers at once. The minor spacing shift might be a problem.



3. A bottom view of the core reveals the hole in the cylinder shell where the check pin extends downward from the plug.



4. A full size Everest cylinder.

Capping shouldn't be affected since the chamber holes on the top are spaced identically to standard Best style cores. It may appear that the two different spacing patterns identified in *illustration F* (shoulder and tip stopped keys) seem to contradict my statement that the spacing is identical. The dimensions listed are only different because they are measured from different points of reference on the keys.

Although the Schlage Everest keys are tip stopped, Schlage has decided to concede to industry standards for the small format I-Cores and reference key bittings from tip to bow. This makes it easier for locksmiths using other brand products to shift to the Schlage product with minimal confusion.

Since the specifications and servicing are virtually the same, you may be able to use existing pin kits for the Schlage small format I-Cores. Schlage's product literature indicates some specific (brand) pins to avoid using with Everest SFIC. Even though they may physically enter the pin chambers, using those listed could void the product warranty.

Although not pictured here, Schlage's mortise type housings have advantages over those made by many other manufacturers. Whereas most brand housings have the mortise cylinder cams staked/riveted in place, Schlage's housings have cams that attach with a screw. Changing cams on a Schlage small format housing should be a lot faster and easier.

Everest Full Size Cylinders

Photograph 4, shows a full size Everest cylinder. The Everest key for this type cylinder has a larger than standard bow, although its shape is



5. A side view of an Everest cutaway cylinder.



6. A much closer view of the key and lip.

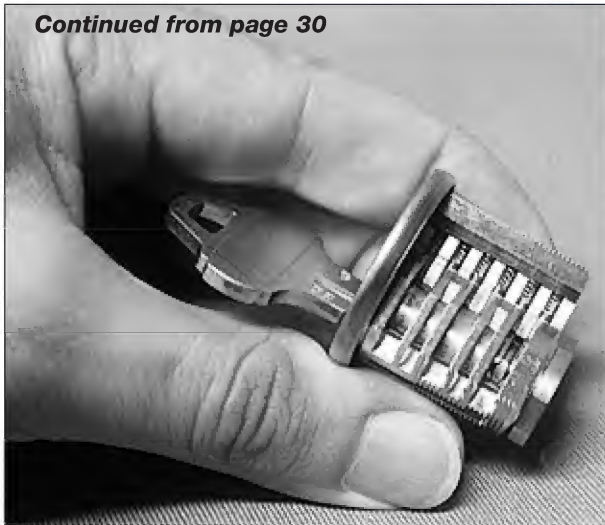
nearly the same as a standard Schlage key. Because it relies on the same patent as the keys for small format I-Cores, its key also requires a secondary milling operation to create the lip that will lift the check pin in the Everest lock cylinder. A side view of an Everest cutaway cylinder is shown in *photograph 5*.

You can see that the check pin is located toward the back end of the cylinder, and is specifically between the fifth and sixth pin chambers on

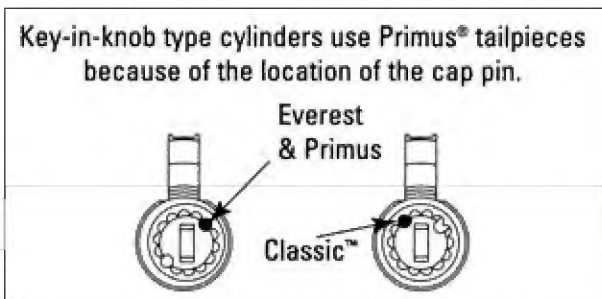
the right side of the keyway. The Everest blank, below the cutaway cylinder, shows the lip toward the tip end of the keyway. It is located between the fifth and sixth key cuts.

Photograph 6, is a much closer view of the key and lip. The secondary milling not only brings the keyway groove deeper sideways into the key blade, but also downward. The lip has been milled away in the center portion of the key blade. A Primus version of Everest is still

Continued on page 32



7. The Everest key is fully inserted into the keyway.



H. A view of the tailpiece sides of the different key-in-knob cylinders.

9. The lip on the key pulls the check pin inward.



on the drawing board, but details have yet to be filled in. The portion milled away is just in case a Primus version has its side cuts in that location.

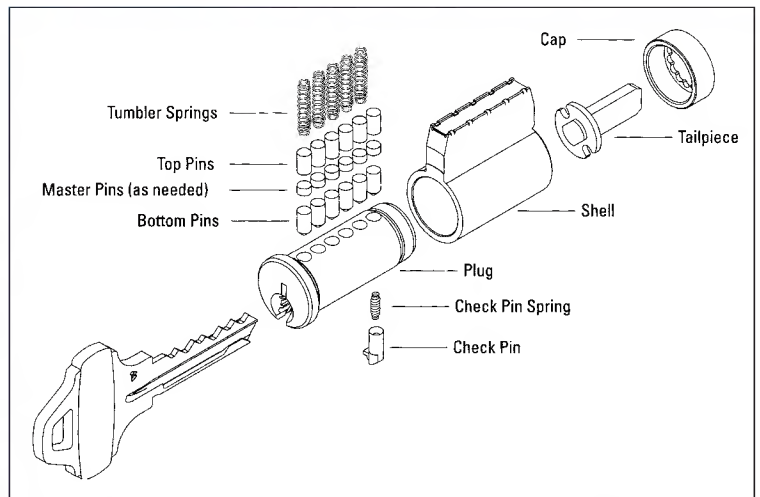
If such a product were to be introduced by Schlage and the Everest blanks had material there, it would be theoretically possible to convert standard security Everest keys to high security Primus versions. Nothing, I repeat, nothing has been confirmed as to what a Primus version of Everest might ultimately look like.

The Everest key is fully inserted into the keyway of the cutaway cylinder in *photograph 7*. The lip near the end of the key has pulled the

check pin completely into the plug, which (along with the pins being at the shear line) allows the plug to rotate.

Illustration G, shows a mechanical overview of an Everest full size key-in-knob type cylinder. The mechanical construction is nearly identical to the current standard Schlage key-in-knob type cylinder, except for the existence of the check pin and hole in the shell. There is one additional difference that became necessary because of the location of the check pin.

Illustration H, shows diagrams with a view of the tailpiece sides of the different key-in-knob cylinders. Like the finger (side) pins of a Primus



G. A mechanical overview of an Everest full size key-in-knob type cylinder.



8. A bottom side view of an Everest key-in-knob cylinder.

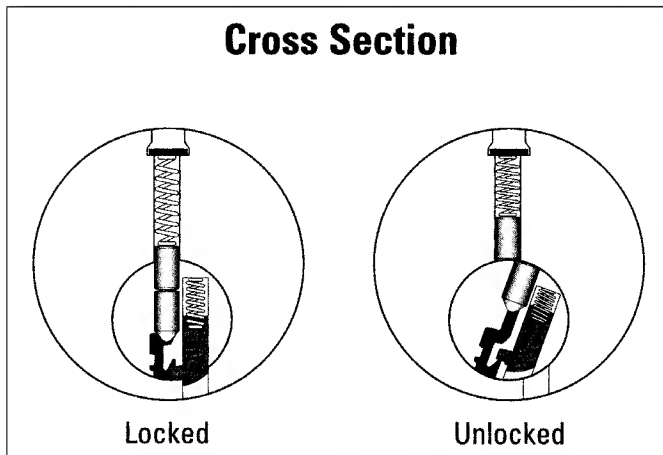
cylinder, the check pin would be in the line of the cap pin and spring, as located in the former standard (now also referred to as "Classic") cylinder. The tailpiece used with Everest is the same normally used with Primus cylinders to account for the cap pin being on the opposite side. When the plug is removed for servicing, coding the lock is identical to standard Schlage cylinders. Just as with the Primus finger pins, a key should be left in the plug to keep the check pin from popping out.

Photograph 8, shows a bottom side view of an Everest key-in-knob cylinder. The locked check pin can be seen in the hole toward the back end of the cylinder. When the key is pushed all the way in (*photograph 9*), the lip on the key pulls the check pin inward. The diagrams in *illustration I*, show the same concept.

A full size (large format) Everest IC cylinder and housing can be seen in *photograph 10*. The cut out in the housing exposes part of the bottom of the core. The hole in the shell and the extended check pin are visible. Of the two keys shown, the control key is on



10. A full size (large format) Everest IC cylinder and housing.



1. When the key is inserted the lip on the key pulls the check pin inward.



11. The tip cause the actuating mechanism to retract the retainer pin to remove the core.

the left. Except for the additional Everest features, the control key works the same as "Classic" full size Schlage IC. The extended length and cut at the tip cause the actuating mechanism to retract the retainer pin in order to remove the core from the housing, as shown in *photograph 11*. Except for the extended key tip, the cuts on the operating and control keys are the same.

Key Control

All the different versions of Everest keys will require modified key vise jaws to hold them when duplicating or cutting them by code. The key blanks and keyways are referred to by different Triad series. The Triad series keyways use a three-digit number to identify the keyway pattern. The small format IC keys are the Triad-B series, and they are all restricted keys. Authorization is required for duplicating those keys.

Illustration J, shows a number of diagrams, which illustrate the various particulars of the full size Everest keys. It works a little bit different from small format Everest. While small format uses only fully restricted keys, full size Everest has both open and restricted keyways. The three diagrams on the top row show the general physical appearance and layout of the blanks. On the far left, this side of the key has the Schlage name embossed with the Everest patent number and symbol below it. This is the standard layout for Triad-C keys.

Triad-C are open keyways and do not require special authorization for duplication, but still require modified key cutting equipment to cut the keys. They are still patented, but are to be sold only to locksmiths. Triad-C is not intended for what is traditionally thought of as key control. The patent prevents other companies from making compatible replacement blanks and making them out of less durable material or less exacting tolerances. Triad-C is intended to maintain key quality. Key duplication would have to go through locksmiths using Schlage original key blanks.

The key in the middle has the Schlage name embossed, but besides the patent number and symbol, you can also see the words: "DO NOT DUPLICATE". The DND designation is optional for Triad-C blanks, but standard for Triad-D.

To the far right is a back view of an Everest key. There is plenty of blank space for stamping or marking the key. The key section is identified on the shoulder of the key. This one is marked "C145" which is a Triad-C keyway. Triad-D keys would have the letter D prefix followed by a three-digit number. The various Triad-C open keyways and key sections are

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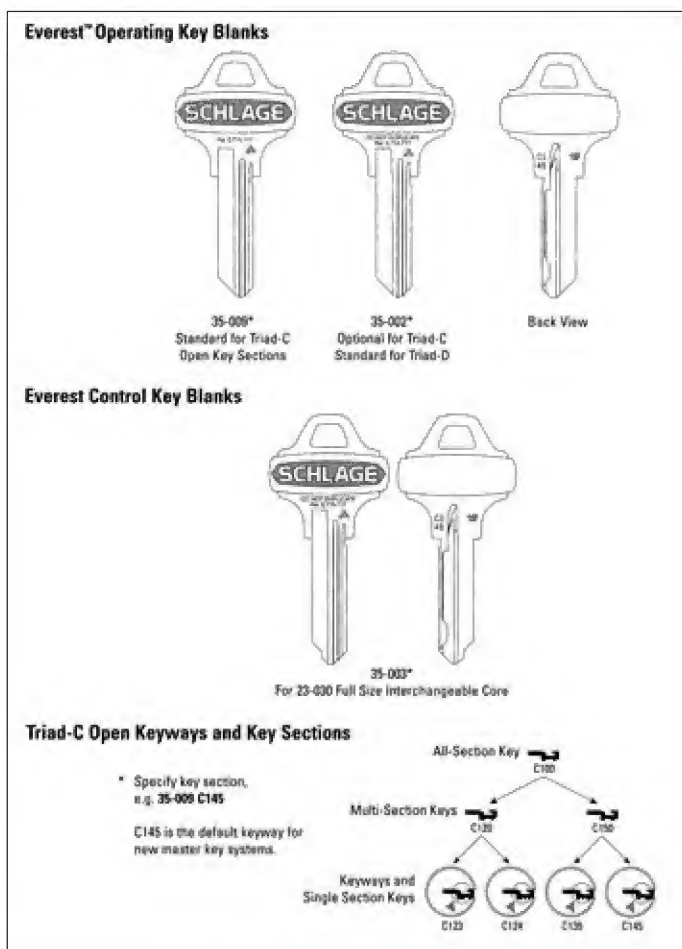


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#ASA - 2000



J. A number of diagrams, which illustrate the various particulars of the full size Everest keys.

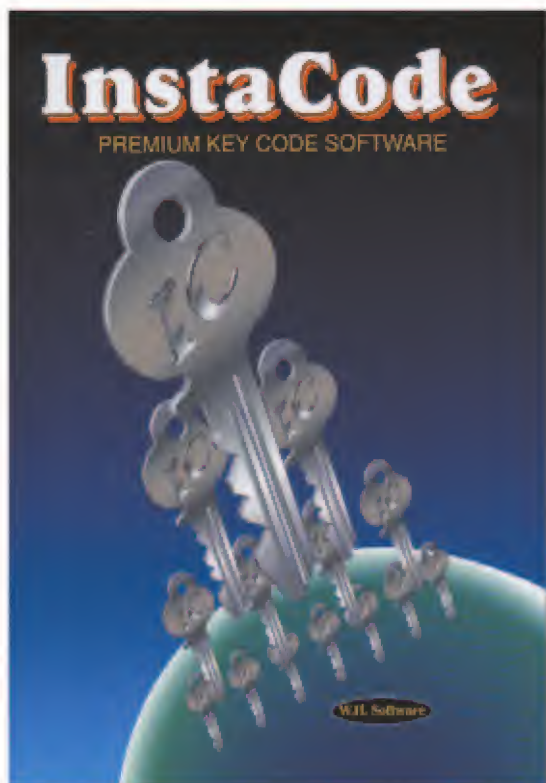


illustrated at the bottom of *illustration J*. No Triad-D keyways are shown for increased security of the keyways.

Front and back views of Everest full size control key blanks are shown in the middle of *illustration J*. The markings are essentially the same as the Everest operating key blanks. The only difference is the extended tip needed for pulling cores in full size Schlage Everest IC products. They also have the keyway or key section marked on the shoulder of the key.

Triad-D is similar to Triad-B in that they are fully restricted and require authorization for any key duplication. If a customer starts with full size Everest Triad-C and wishes to upgrade to the better key control of Triad-D, the plug is the only part of the lock cylinder hardware that needs to be changed.

You should be able to get Everest product and literature from your current supplier of Schlage hardware products. Or if you need additional information on the Everest product line, you can contact Schlage Customer Service at: 800/847-1864, or FAX: 800/452-0663. Circle 287 on Rapid Reply. **TRIL**



#IC - 2001

InstaCode

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1998

SATURN

SC2



by
Michael Hyde



The new sporty Saturn coupe is budget minded and performs well for its class. In 1997, Saturn went to the new GM 10-cut keyway. The only thing the Saturn shares with the GM 10-cut is the keyway, spacing and depths. The locks

on this car are very different than other GM 10-cut locks. The locks are made by the big European automotive lock company called HUF.



The Saturn now uses the new GM corporate shaped bow.



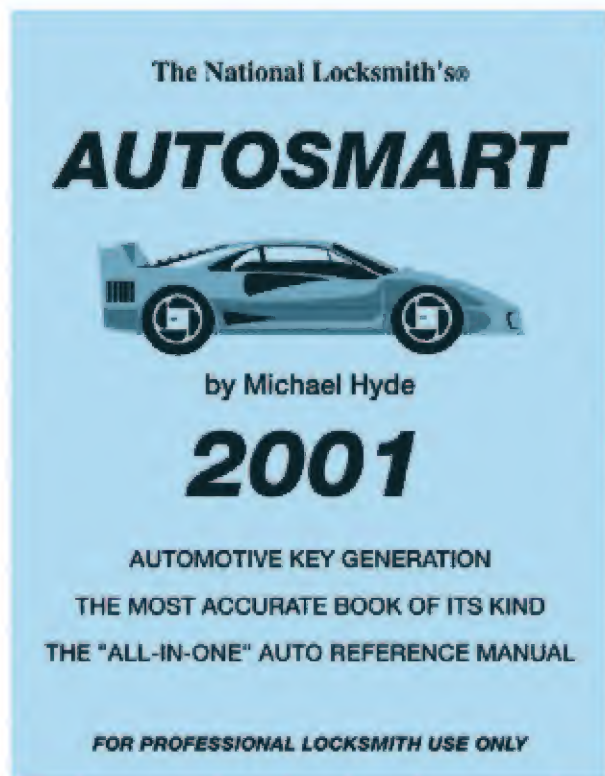
The same tumblers are used on the ignition doors and trunk. The wafer tumblers have a notch on the side for the sidebar and also have a different inside height depending on the depth. What this means is that they can be decoded using an EEZ-READER.



This car is a dream to open. The linkage rods are exposed and easy to get to. We used a horizontal linkage rod tool (like a Z-tool) and were able to move the linkage rods easily.



The ignition lock cylinder sits on the column.



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To get easier access to the ignition lock cylinder you must remove the plastic 2-piece shroud that covers that area of the column. There are five screws to remove.



The access hole for the ignition retainer is on the right side of the lock housing.



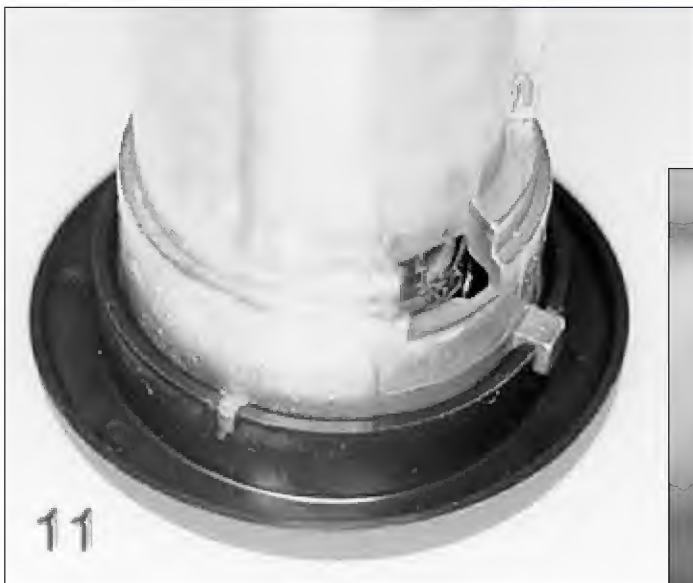
A view of the column with the top portion of the shroud removed.



The ignition lock is held in by an active retainer. We found the retainer worked better when the key was in between ACC & RUN.



The ignition lock removed from the car. You can also see the square shaped retainer on the side of the lock.



The black plastic ignition face cap must be removed to get the cylinder plug out. Gently use a small flat bladed screwdriver to work off the cap.



A view of the lock with face cap removed.



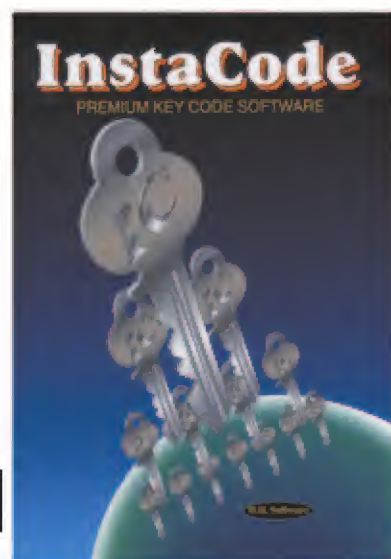
The cylinder plug uses a spring retainer on the back of the lock to keep it from sliding out. Insert a working key and depress the rear retainer so it can travel past the stop.

InstaCode

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#IC - 2001

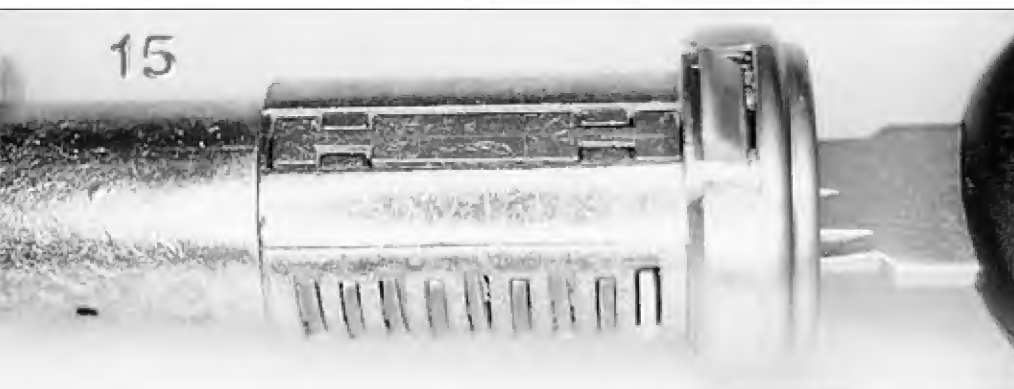




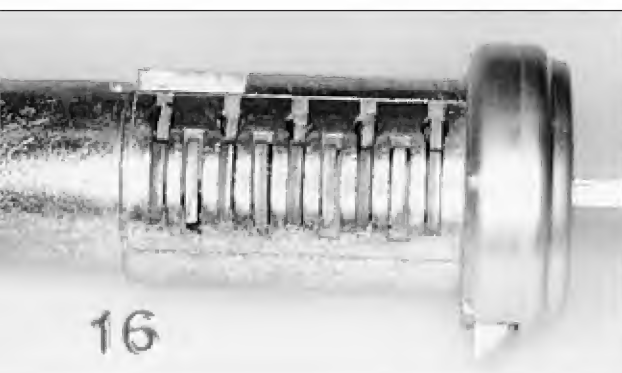
When you get the retainer past the stop, be careful not to let it go flying on you, since it is spring loaded. Remove the retainer and the spring from the plug.



A view of the outside door handle and lock. The door lock is mounted separately from the door handle.



The ignition lock uses a sidebar.



There are 9 wafers in the ignition lock in positions 2 through 10.

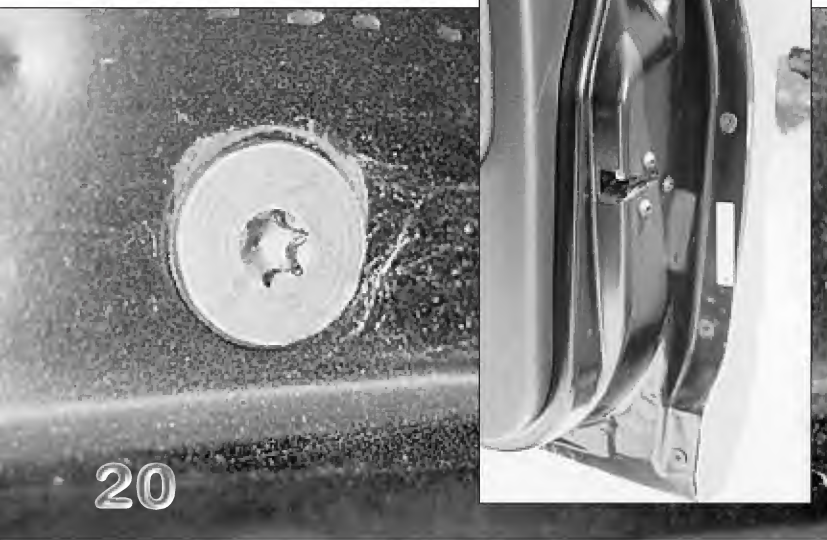


First thing to remember is that Saturn cars are different. The outside door panel must be removed to get to the door lock. Removing the inside door panel will not work.

Continued from page 40



To remove the outside door panel you must remove the Torx-30 bolts that go around the edge of the door.



A close-up look at the Torx-30 bolt.



The next step is to remove the door mirror.

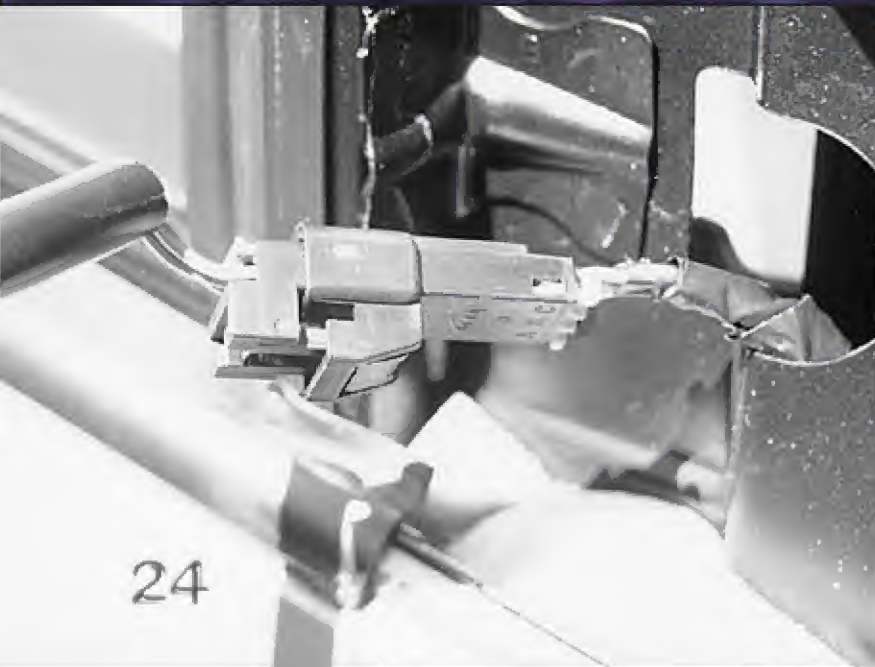
42 • The National Locksmith



There is a plastic trim cover on the opposite side of the mirror. Remove the cover, it snaps on and off.

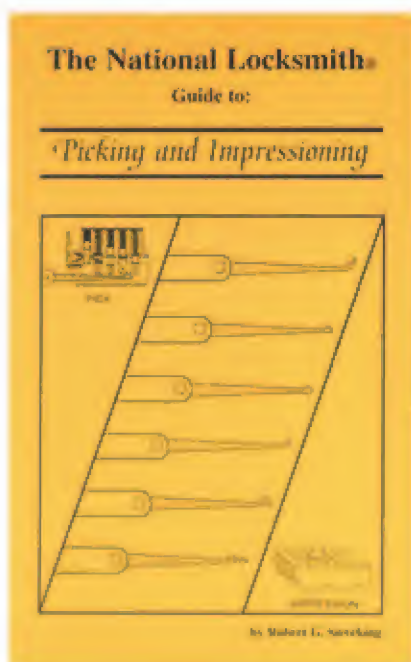


Remove the three 10mm nuts that hold on the mirror. Hold the mirror so that it doesn't fall.



Unsnap the electrical connector and put the mirror in a safe place.

There is a piece of molding that runs along the top of the outside door panel. Use a small flat bladed screwdriver to gently work it up starting at the portion that was hidden under the mirror. At the other end of the molding is a screw that holds the end. Remove the screw.



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#PI

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The next step is to remove the outside door handle. On the forward portion of the handle is a small plastic retainer, you must lift up the handle to see it.



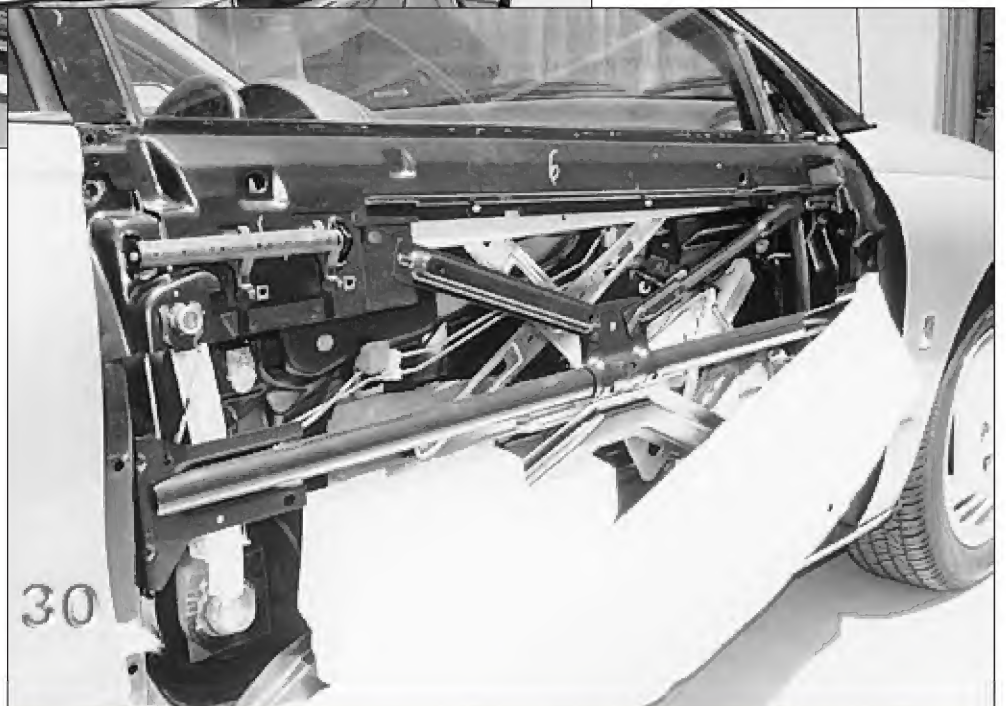
Separate the two plastic retainers and remove.



Once you have the retainer out you can slide the handle rearward to remove it.

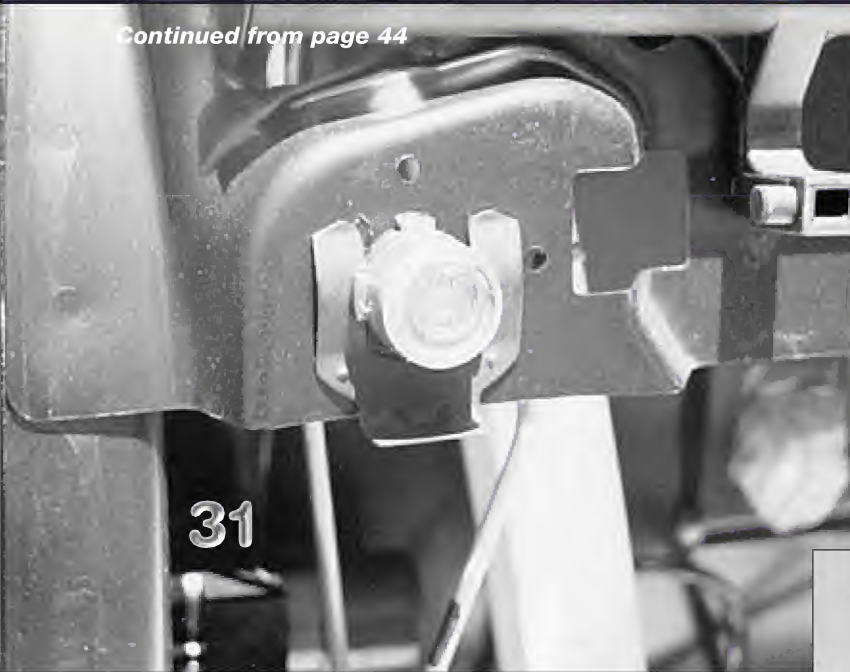


The door panel can now be removed. There is a plastic wind barrier on the door. Gently pull that aside to get to the lock cylinder.



A view of the door components.

Continued from page 44



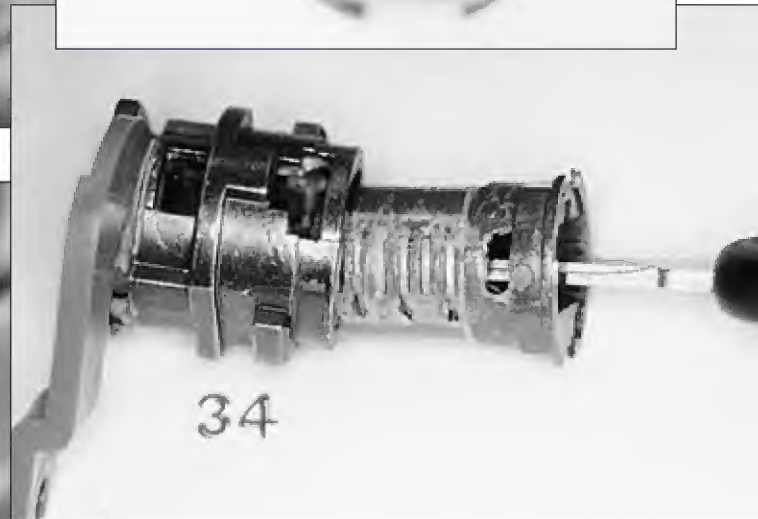
31

The standard GM type metal clip holds in the lock cylinder.



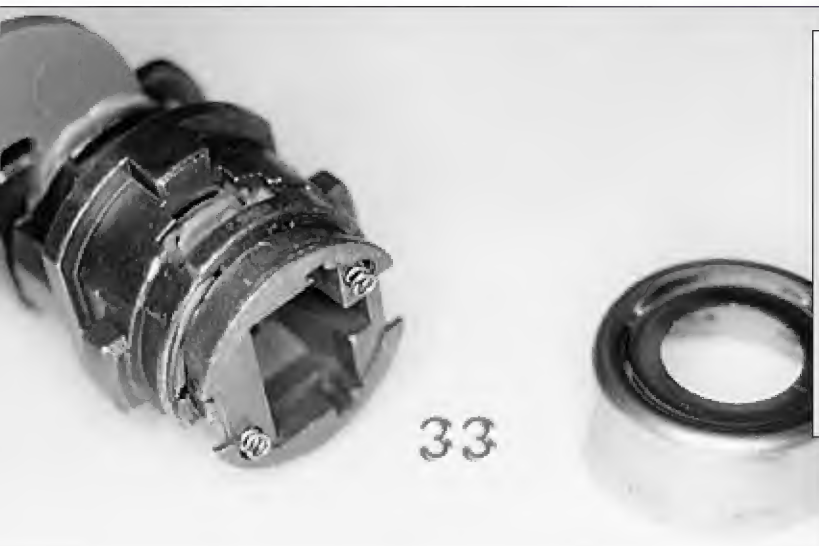
32

Slide the linkage rod off the plastic tailpiece.



34

The cylinder plug is warded and must be picked or turned with a key to slide out of the housing.



33

The face cap can be reused, just gently wedge it off.



35

The sidebar is pictured. This sidebar is removable. Once you remove the wafer tumblers, push in the sidebar and slide it out the front of the lock. Talk about a crazy new design. The door lock cylinder contains 6 tumblers in positions 5 through 10.

TRUNK
LOCK

36

The trunk lock cylinder sits behind the rear plastic tail light assembly.



A metal clip holds in the lock cylinder.

Open up the trunk lid and there is no trim panel to remove.



Guide to Motorcycles

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#MOT - 2

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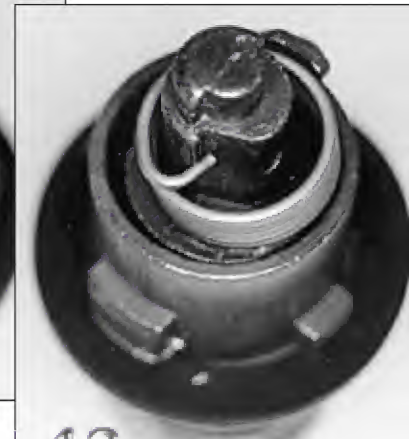
39

The tail light assembly must be removed to get the lock cylinder out. There are nine 10mm nuts to remove.



42

A "C" clip holds on the tailpiece.



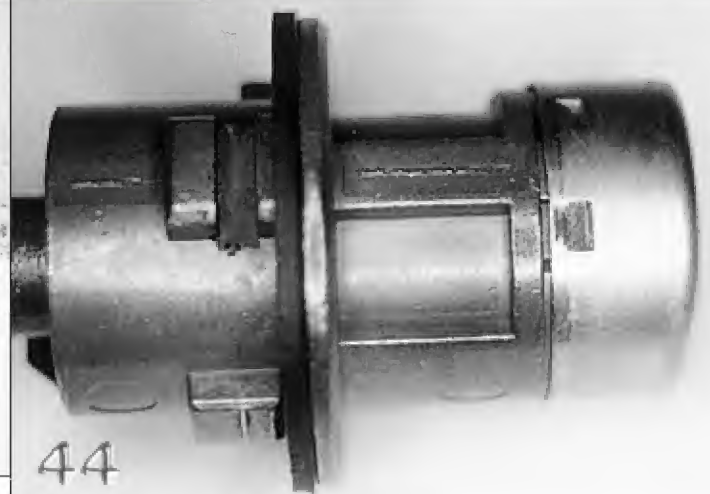
43

A top view of the return spring on the back of the cylinder.



40

A view of the tail light assembly moved aside. Be careful not to scratch the paint with the backside of the tail light assembly. The lock cylinder can now be taken out.



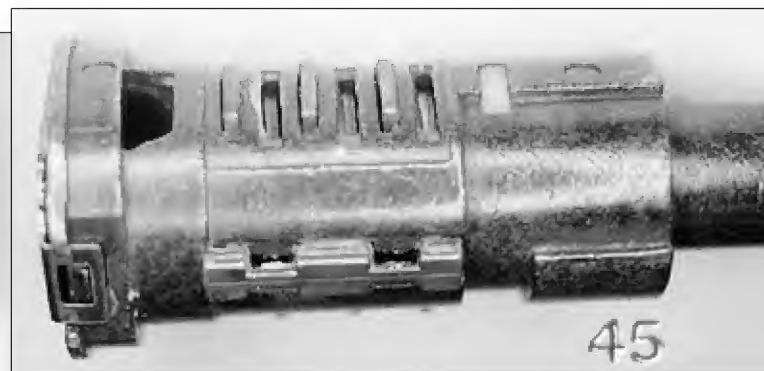
44

The face cap must be removed and is reusable.



41

The trunk lock cylinder removed from the car. There was a rubber weather boot over the front section of the lock.



45

The cylinder plug is warded and must be picked or turned with a key to remove it. The trunk lock plug has a sidebar. The trunk lock cylinder contains 6 tumblers in positions 5 through 10.



A view of the sidebar removed from the lock.



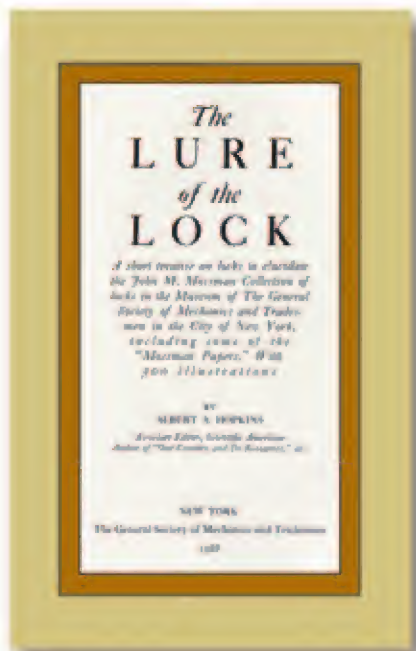
This lock is similar to the door lock. If you remove all the wafer tumblers, you can then remove the sidebar out of the front of the plug.



The trunk lock disassembled.



There is no locking glove box lock.



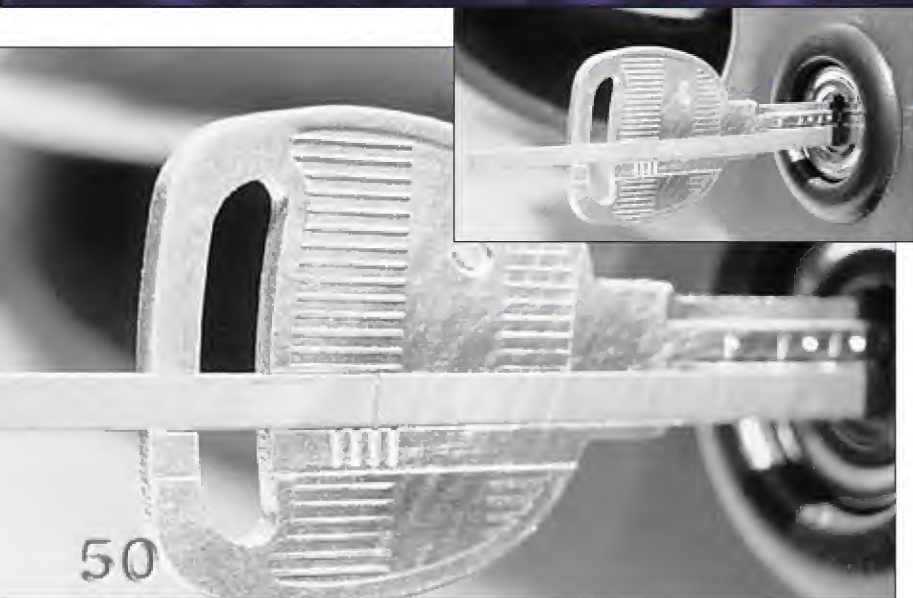
The Lure of the Lock

This hardcover book, compiled in 1928, features dozens and dozens of beautiful photographs on ancient through modern locks.

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#LURE



As I mentioned earlier you can read the wafers on this sidebar car. I was impressed at how easy it was to read the door lock cuts.



The EEZ-READER also worked on the ignition.

MAKING THE FIRST KEY

Note: All locks have sidebars. There is no glove box lock on Saturn's. Only 9 cuts are used in positions 2 through 10. Your first cut is in position 2, from the bow.

Method 1: Use EEZ-READER to decode the door lock. This will give you positions 5 through 10. Use the reader for the missing cuts in the ignition lock.

Method 2: Remove and disassemble the trunk lock. This will give you cuts in positions 5 through 10. Next, progression the ignition lock for cuts in positions 2, 3, & 4. Try to sight

read the first three positions in the ignitions. Position number 1 is not used anywhere. Your first cut is in position 2, from the bow. Position number 1 is not used in any locks.

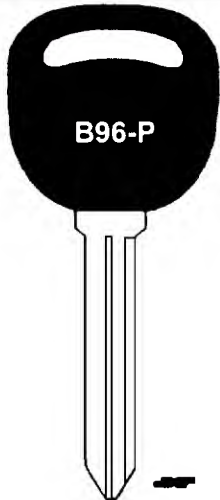
Method 3: Remove and disassemble the door lock. This will give you cuts in positions 5 through 10. Next, progression the ignition lock for the cuts in positions 2, 3, & 4. Try to sight read the first three positions in the ignitions. Position number 1 is not used anywhere. Your first cut is in position 2, from the bow. Position number 1 is not used in any locks.

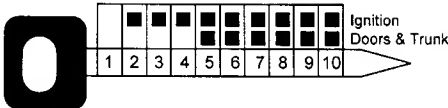
VITAL STATISTICS

SPACE AND DEPTHS:

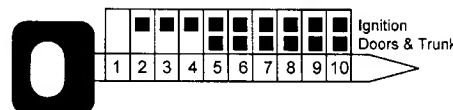
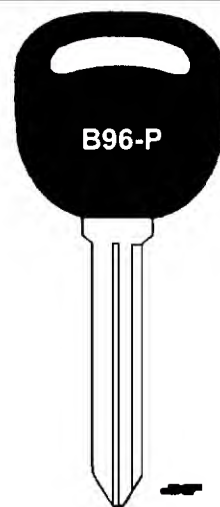
B CODE SERIES: 001-2000											
Bow SPACING FROM TIP										Tip	Cut to Cut: .092
1	2	3	4	5	6	7	8	9	10		
1.034	.942	.850	.757	.665	.573	.481	.389	.297	.205		
Bow FRAMON SPACING										Tip	
1	2	3	4	5	6	7	8	9	10		
.216	.308	.400	.493	.585	.677	.769	.861	.953	1.045		
Key Blanks:		ILCO: P1110, B96				SILCA: GM39					
Reed Codes:		N/A				HPC 1200 CM		CF215			
Curtis Clipper:		Cam GM-6		Carriage GM-6A		ITL MFG:		519			
Pak-A-Punch		PAK-G1				M.A.C.S.:		2			
NOTES: FRAMON—Lay tip stop clip flat against left side of vise, then tip stop key against clip. Set first cut at .216. If your code has 9 cuts in it, start your cutting position in position 2. If your code has 10 cuts in it, start your cutting in position 1.											

DEPTHS	
1	.315
2	.290
3	.265
4	.240





DEPTHS
1 .315
2 .290
3 .265
4 .240



The CodePro 4500 Deluxe

One of the new exhibitors at the ALOA show in Cincinnati, Ohio this year was CodePro Manufacturing. Attending the show was Gordon Gravelle, President/CEO, of the Canadian based company. Gordon provided detailed operation and construction information for the fully automatic computerized CodePro 4500 Deluxe code-cutting machine. (See photograph 1.) With an average cutting cycle of 10 seconds and a cutting

tolerance of $\pm .001"$, this code machine has some impressive features.

CONSTRUCTION:

Virtually the entire machine is constructed out of high quality aluminum. The cutter shaft is supported by two sealed ball bearings. The entire shaft is then pressed into an aluminum block 1-1/2" thick. The cutter is mounted against a 1" supporting collar, which enables the cutter to spin perfectly true to the shaft. In other words, the cutter does

not have a wobbling effect. The cutter is firmly held in place with another flange and a large left-hand threaded nut. (See photograph 2.)

Mounted over the cutter is a plastic chip guard that prevents most cutting chips from flying out. (See photograph 3.) The steel jaw is double sided to allow for different styles of key blanks. (See photograph 4.) To improve clamping, the clamping assembly makes use of a needle bearing assembly between the top jaw and the wing nut. This in turn reduces friction when clamping the key. (See photograph 5.)



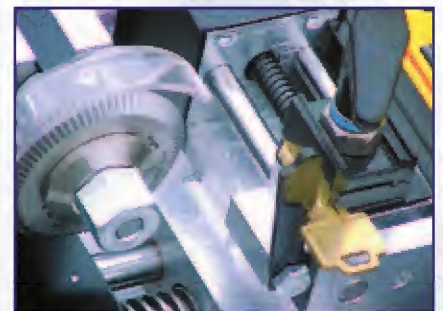
1. The CodePro 4500 Deluxe code-cutting machine.



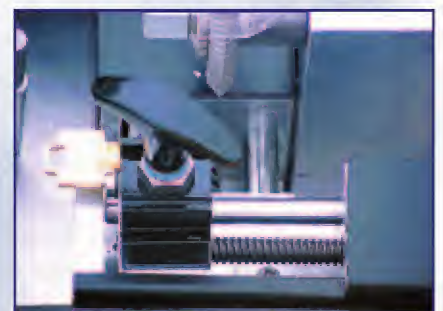
2. The cutter shaft is supported by two sealed ball bearings.



3. Mounted over the cutter is a plastic chip guard.



4. Mounted over the cutter is a plastic chip guard.



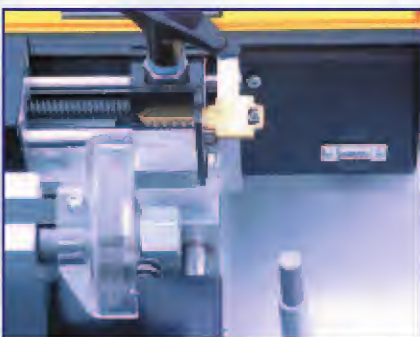
5. The clamping assembly makes use of a needle bearing assembly between the top jaw and the wing nut.



6. A totally enclosed self-cooling 1/6 horsepower motor drives the unit.



7. Cutting information is entered into the machine by means of a 16-button totally sealed keypad.



8. The control box contains a RS232 connector, which allows the user to connect to a portable computer or personal computer.

A totally enclosed self-cooling 1/6 horsepower motor that can either be powered by 115/230 Volts 50/60 Hz or a 500W generator drives the cutter shaft. (See *photograph 6.*) A 12-volt model is available.

Power and proper cutting RPM is transferred to the cutting shaft via a rubber timing belt and two pulleys.

The top of the control box contains a vibrant decal that is laminated. The laminate provides protection against grease and dirt. For a display unit, the CodePro 4500 uses a 2 line by 16 line Liquid Crystal Display (LCD). Cutting information is entered into the machine by means of a 16-button totally sealed keypad. (See *photograph 7.*) A legend provides important programming information.

The back of the control box contains a RS232 connector, which allows the user to connect the key cutter machine directly to a portable computer or personal computer. (See

photograph 8.) Also located at the rear of the box is a fuse holder that contains the main 8A power supply fuse.

BASIC OPERATION & SETUP:

Pressing the 'B' key (for MFG Code) on the keypad will launch you into a number of different setup options. Here the user may set the machine up by:

- Predefined Commercial Code
- Predefined Automobile Codes
- Direct 3-digit setup code
- Direct 10-digit setup code.

The following will briefly explain the different functions of each sub menu.

Modern Safe Opening



This book is a step-by-step How-To course in safe penetration. Opening safes is one of the most profitable aspects of the locksmithing business.

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#MSO - 1

Predefined Commercial Codes: This feature is new to the code machine industry. It allows the user to setup the machine by using predefined commercial names. Every second or so the CodePro will flash a different commercial lock name. Once you see the manufacturer's name displayed on the screen, you simply press any key on the keypad. The CodePro 4500 will then automatically program itself to meet the specifications of that particular manufacturer.

For an example, we will program the machine to cut a Corbin commercial key. The CodePro will actually display the name Schlage. If you do not press a key on the keypad, the machine will automatically cycle to the next name: Kwikset. Without pressing a key, the CodePro will continue to cycle manufacturer's names. This will continue until the CodePro cycles to Corbin. Now press a key.

The CodePro will now automatically program itself to cut Corbin keys. You can now return to the main menu.

Predefined Automobile Codes: This is the same as the predefined commercial option. The only difference is that the predefined names are based on the automobile industry: i.e. Ford, Chrysler, Volvo, etc.

Direct 3-digit: Allows the user to program the machine using a 3-digit setup code. There are over 800 different setup codes contained in the Depth and Spacing manual provided with the machine. For an example, we will program the CodePro 4500 to cut Schlage keys by code.

Simply locate Schlage in the Depth/Spacing manual and note the 3-digit code beside the name. In our case the number for Schlage is 237. Punch the number 237 into the keypad. The CodePro will now display the name Schlage. After a couple of seconds, the CodePro will return to the main menu.

Direct 10-digit: This feature is great for adding new codes not published in the Depth and Spacing book. The CodePro 4500 will display the following:

- TFC BCC ZCT DRP
- 231 156 315 18

TFC: To First Cut

BCC: Center to Center or Cut to Cut

ZCT: Zero Cut

DRP: Drop Level

Once you have the specifications of a new key, simply type over the existing numbers. For example, let's cut a Schlage key. The distance to the first cut or (TFC) is .237, so you type in 237 in the keypad.

Next you enter the BCC (Cut to Cut) number for Schlage which is .156. Enter 156.

A zero cut (ZCT) for Schlage is .335 so now enter 335. Finally you enter the drop value (DRP) which is 15.

After all the key cutting information has been entered the CodePro will return to the main menu.

KEY CUTTING:

To cut a key by code, punch in the bitting code of the key you would like to cut. The CodePro can handle up to 14 different cuts. If you make a mistake, press 'A' (for Abort) and simply start again. Once you have the correct bitting, press 'C' (for Cut Key) on the keypad. You will now have several different cutting options:

Plunge: The Jaw will move in, then out, then over, then in again until the entire key is cut. The average time for plunge cutting is 11 seconds.

Flat: The jaw will slide the key from one cut to the next cut. This prevents peaks and ridges on the key. This feature is great for automotive and some commercial locks.

Contour: Allows a universal cutter to make a key exactly like a plunge cut. This means the user can use a single cutter to virtually cut any type of cylinder key. The CodePro will automatically cut the right angles and flats as if you were plunge cutting with the proper cutter. You no longer have to keep changing cutters. Contour cutting is also faster than plunge cutting. The average time for contour cutting is 7 seconds.

CALIBRATION:

The CodePro 4500 allows the user to electronically calibrate the machine for both depth and spacing. The tolerance for depth is +/- .005" and the tolerance for spacing is +/- .050". If you notice that after cutting a key that the machine is cutting two thousands of an inch too deep, simply add two to the value displayed on the screen. Pressing the letter 'E' (for Calibrate) on the keypad will

display your calibration options:
Depth: 5 Spacing: 50

If in our above example you needed to add 2 to the existing depth number of 5, simply enter the number 7. If the spacing remains the same, simply retype over the existing numbers. The CodePro will now reflect the new numbers entered (Depth 7 Spacing 50) and after a short period will return to the main menu.

To ensure complete accuracy, the user should check the cutting accuracy of the machine after changing cutters.

FLATS:

Every now and then you will need to widen the root of a cut. Let's say you have a 1012 cutter on the machine and you wish to plunge cut a Schlage key. A 1012 cutter has a .015" bottom and a Schlage key requires a root cut of .080". Simply pressing 'F' (for Flats) on the keypad will help you resolve this problem. The CodePro will display: FLATS: 00

Now you need to calculate the correct flat number. Take 80 and subtract 15. The difference is 65. Enter the number 65 into the keypad. Now the CodePro will automatically slide the 1012 cutter over .065" every time it makes a cut, giving a new root cut of .080". Its that simple!

ADVANCED FEATURES:

Pressing the letter 'D' (for Menu) will allow the user to access the following options:

Cutting Speed: Allows the user to set the cutting feed rate. Range (1-5).

Security: Allows the user to program security access codes. The option is normally off. If turned on, users will be required to enter a 5-digit security code after turning on the machine. This unique feature helps with key control.

Key Counter: Displays the total number of keys produced since the machine was purchased. Another unique feature that helps with key control and management.

Half Stepping: Trying to impression or make try-out keys? No problem. Let's say you just cut a car key with a bitting of 44325. The key refuses to work so you decide to increase the first and the third cut by a 1/2 cut. Put the key back in

the vice. The CodePro will display: Half Step:

Enter the number 1 for the first cut and 3 for the third cut. Now press 'A'. The CodePro will now recut the first and third cuts only. Why use a file?

Internal Master Keying: After answering a few questions, the CodePro 4500 will automatically generate a master keying system for you. (No external computer required.)

External Master Keying: Download and cut an entire master keying system. The CodePro will actually display room numbers, quantities required and biting numbers. (See Master keying summary.)

Power Saver: Normally off. If turned on, the CodePro 4500 will automatically shut off after a predetermined interval.

Cut Options: Select available cutting options. (Plunge, Flat, Contour or All.)

Deposit Keys: A special routine designed to help the user cut safe deposit keys. The CodePro contains some predefined depth & spacing information for various manufacturers.

CODE SOFTWARE:

The CodePro 4500 has several internal routines allowing the machine to directly work with various software programs. Your choices of software include: InstaCode, Computext, BlackHawk or Treskat. In most cases the software is not provided with the machine. However, for a nominal fee, customers can purchase the software from the CodePro Manufacturing factory.

To use the software, simply connect the CodePro 4500 via the RS232 port to the serial port of your personal computer or laptop. Start your code software program on your computer. Look up the appropriate code. Once you have found your code, press 'B' on the CodePro 4500 keypad and select the 'download' option. Now select 'send to machine' on the menu option displayed on your computer. Within a few seconds, all the pertinent key data (depth, spacing, biting) will be sent to the CodePro 4500 code machine. You may now put a key blank in the jaw and press 'C' (for Cut Key). The CodePro 4500 will now cut the key.

MASTERKEYING:

Using a special Windows based software program designed and licensed exclusively to CodePro Manufacturing, it makes a complex master keying job fast, reliable and easy. The program, MasterPro 2, comes with the purchase of the CodePro 4500 key machine. However, it may be purchased separately. With MasterPro 2, users can create, save and modify complex master keying systems. There are over 50 predefined manufacture's specifications to choose from when designing a new system, or you have the option to create your own.

Once you have created the system, you may assign room numbers, key location and quantity of keys required for each individual room number. After this task has been completed, you may download the entire system to the onboard memory of the CodePro 4500. Simply select the 'External Mater keying' option from the advanced menu. Now the CodePro is ready to cut the complete system for you, one key at a time.



Guide to Motorcycles

For years locksmith have begged for a comprehensive service manual on motorcycles and its finally here!

CLICK HERE TO LEARN MORE



#MOT - 2

FEATURES (MODEL)	BASIC (4500-A)	DELUXE (4500-D)	AUTO (4700)	SIGNATURE (4500-S)
SETUP				
Preprogrammed automobile codes	5	10	n/a	20
Computer interface direct	yes	yes	yes	yes
3-digit entry	no	yes	n/a	yes
10-digit entry	yes	yes	n/a	yes
Custom codes	yes	yes	n/a	yes
Custom code storage	5	10	n/a	50
CUTTING				
Fully Automatic (no hand cranks)	yes	yes	yes	yes
External computer required for operation	no	no	no	no
Plunge	yes	yes	yes	yes
Flat	yes	yes	yes	yes
Contour	no	yes	yes	yes
Programmable feed rate	yes	yes	yes	yes
Maximum depths	10	14	14	14
Maximum space	10	14	14	14
Tilting head for Medeco/Emhart(automatic)	no	no	n/a	yes
Sealed bearing assembly	yes	yes	yes	yes
Cutting time (average in seconds)	30	7	7	7
Half stepping	yes	yes	yes	yes
Cutters Supplied	1	2	1	3
Jaw handles Best, 5-pin Ford, 10-pin Ford, etc..	yes	yes	yes	yes
Advanced Options				
Security (user lockout)	no	yes	yes	yes
Electronic key counter	no	yes	yes	yes
Internal Masterkeying	yes	yes	n/a	yes
External Masterkeying	yes	yes	n/a	yes
Half stepping	yes	yes	n/a	yes
Safe Deposit Keys	yes	yes	n/a	yes
Automatic Power Off	no	no	yes	yes
Masterkeying				
Software included (Windows)	yes	yes	yes	yes
Download bittings, room #	yes	yes	n/a	yes
Download quantities per room	no	yes	n/a	yes
Maximum key storage in memory	25	600	n/a	4000
IC core systems	yes	yes	n/a	yes
CODE SOFTWARE				
Included	no	no	yes	yes
Compatible with other code software	yes	yes	yes	yes
Decoder	optional	optional	yes	yes
TECHNICAL				
LCD display	2 x 16	2 x 16	4 x 16	4 x 16
Warranty (years)	1	1	2	2
Extended plan available	yes	yes	yes	yes
24 hr 7-day tech support	yes	yes	yes	yes
POWER				
12 Volt (additional fee)	199	199	199	199
120-240VAC, 60HZ (standard)	yes	yes	yes	yes
240VAC, 50 HZ (additional fee)	199	199	199	199

A. CodePro product comparison chart.

When doing so the CodePro 4500 will display the following:

Room 101

Cutting 1 of 5 keys

Now insert a key blank and press 'C' to cut the key. After the key is cut, the

CodePro will display 'Cutting 2 of 5 keys'. Once you have cut all 5 keys for that room, the CodePro 4500 will display:

Room 102

Cutting 1 of 12 keys

This entire process will continue until the entire system has been cut. You may abort at anytime and continue later if you desire.

CUTTERS:

The CodePro 4500 (deluxe model) comes with your choice of two different cutters. Your choices include: CP14, CP1011 or the CP1012. CodePro Manufacturing also provides its own cutters.

DECODER:

An optional attachment is the key decoder that has the ability to decode a previously cut key. Once the key has been decoded, the CodePro will make a duplicate within seconds. The CodePro also has the ability to restore the key back to factory specification if you so desire.

WARRANTY:

The standard warranty for CodePro products is a minimum of 1-year parts and labor. Extended warranty plans can be purchased within 30 days of purchasing the machine. The main circuit board can be replaced within minutes at the location of the machine or at the factory.


PRICE & COMPARISON FEATURES:

The CodePro Deluxe is one of four models currently available. At the present time there is the Basic 4500-A; Deluxe 4500-D; Auto 4700; and soon to come the Signature 4500-S. At the time of this review, Gordon Gravelle was in the process of design and development of the CodePro Signature series, which will feature a swivel cutter head to handle Medeco keys as well as other expanded features.

The comparison list in *illustration A*, will include and indicate the various features of each machine:

The suggested retail price of the CodePro Basic is \$2549.00.

CONCLUSION:

For more information contact CodePro at (toll free) 877-450-0776, web site www.arclock.com, or e-mail arclock@air.on.ca. Circle 282 on Rapid Reply. 

SoftDrill™

by LockTec Tools

Let's face it, to forget is human nature. We lose our car keys, we forget appointments, and, yes, some of us even forget the combinations to our locks.

As locksmiths know, manually opening a combination lock requires either special skills or drilling. Locksmiths use autodialers that automatically dial all possible combinations until the lock is opened. Unfortunately, this could take up to 30-hours. Another method for opening the lock is drilling and replacement, which could cost a customer up to \$3,000 and take as long as 72 hours. Furthermore, restoration of the safe's integrity is uncertain, often requiring additional time and expense.

Fortunately there is new technology available that combines

sophisticated electronics, powerful software and a conventional laptop computer. This new technology, SoftDrill™, uses computer algorithms and a sensitive listening device to profile a mechanical lock's combination. *(See photograph 1.)* SoftDrill™ has a powerful electronic transducer microphone to listen to the wheels, gates, fence and lever of a combination lock. This new process can be complete, and the lock opened in as little as 20 minutes. This is done without damaging or destroying the integrity of the safe. The product was developed in response to requests from safe technicians and professional locksmiths for a time saving product.

SoftDrill™ works with most popular laptop computers. Its powerful software operates under Windows

95/98 and comes ready with the capability to open two of the most popular mechanical combination locks - the S&G 6730 and the LaGard 3330.

SoftDrill™ is easy to install. In fact, the five-step setup takes only 5 - 10 minutes; here is how simple it is:

1. First attach the magnetic mounting bracket to the safe's door. *(See photograph 2.)* The bracket has a unique shape that assures compatibility with a wide range of safe doors, lock and handle arrangements.

2. Press the pulley onto the dial (a selection of pulleys is included to cover a variety of dial styles) and tighten the setscrews. *(See photograph 3.)*

3. Attached the precision stepper motor to the mounting bracket and slip the belt over the pulley. *(See photograph 4.)*



1. SoftDrill™ by LockTec Tools.



2. First attach the magnetic mounting bracket to the safe's door.



3. Press the pulley onto the dial.



4. Attached the precision stepper motor to the mounting bracket and slip the belt over the pulley.



5. Affix the magnetic, transducer microphone to the safe door.

4. Affix the magnetic, transducer microphone to the safe door. (See photograph 5.)

5. Connect the cables between the motor and the microphone, the SoftDrill™ and your laptop. (See photograph 6.)

Once set up, simply start the software, select the lock type, and let it run. SoftDrill™ does the rest.

SoftDrill™ is manufactured by LockTec Tools, Inc., a subsidiary of the Mas-Hamilton Group. While the current software opens only the most popular locks, additional software modules will be available in the future to permit the SoftDrill to open additional mechanical combination locks.



6. Connect the cables between the motor and the microphone, the SoftDrill™ and your laptop.

"We set out to give professional locksmiths a state-of-the-art tool and came up with a product that exceeds even our own expectations," said

John Brown, president of LockTec Tools. "SoftDrill™ provides a faster solution and protects the safe from being damaged or destroyed."

LockTec Tools will limit distribution of SoftDrill™ by selling the product only to safe manufacturers, government agencies and through a certified locksmith distributor. Each machine has its own serial number. The product will be available later this year and is expected to retail for about \$7,000.

Mark Bates, president of MBA USA, Inc. is currently the exclusive worldwide distributor of SoftDrill™. "This is a great tool for the lock industry," said Bates. "Drilling a safe

can cost anywhere from a few hundred dollars to a few thousand dollars depending on the container. It can also take a long time. The importance of this device goes beyond its ability to open mechanical locks. SoftDrill™ provides a wake-up call for safe owners. Most people do not know that the technology used in today's mechanical locks is the same that was used in mechanical locks manufactured during the Civil War. Hopefully SoftDrill™ will make the public realize that it is time for 19th century technology to go and make room for 21st century technology."

For more information about SoftDrill™ circle 297 on Rapid Reply or contact:

MBA

Phone: (606) 887-0496

Fax: (606) 887-9491

E-mail: mbatools@aol.com

Web: www.mbausa.com **TNL**

Security Key Rings

CHICAGO LOCK'S TAMPER-EVIDENT KEY RING

Chicago Lock Company recently introduced a tamper-evident key ring for the purpose of protecting important keys. Called KeyLOC, it fits a flexible, stainless steel, vinyl-coated cable into a patented ACEII Cylinder, nested in a lightweight housing. It practically eliminates the loss of keys or duplication of keys by an unauthorized person. The vinyl-clad steel cable is the same type used in the aircraft industry and resists cutting. Tampering is immediately evident.

Key ring loops are available in three sizes: four, six and nine inches. The security key clearly warns not to duplicate, and any attempt to tamper with the KeyLOC is immediately evident.

For more information call: (800) 445-3204 or circle 291 on Rapid Reply.



KEY KOP™ I, AND II

Monarch offers a unique locking key ring for rigid control of keys. It eliminates welding/soldering of rings each time a change must be made. By offering a choice of three locks, Tubular, Duo, or Medeco, the security professional may select units appropriate for the level of security desired. Ideal for institutions such as Hospitals,

Universities, Factories, Fire/Security Services and many others.

Key Kop I™ is a seamless aircraft aluminum body with a recessed lock. It has a nylon coated stainless steel aircraft cable, which has the added protection of a stainless spring steel over-wrap to minimize abrasion and kinking. Available in 6", 8", 12", and 18" lengths (measured cable extended).

Key KopII™ also offers a seamless aircraft aluminum body, recessed lock, and a well secured stainless steel shackle creates a tamper evident system unmatched in durability of similar products. Available in 1 1/2", 3", 5", and 7" length shackles (measured assembled).

For more information visit their web site at www.keykop.com or circle 292 on Rapid Reply.



ABLOY'S NEW FLEXSHACKLE KEY RING PADLOCKS

The new ABLOY FX220 series padlock with plastic coated stainless steel cable gives the ability to control your route keys. Once locked, keys cannot be removed from this cable without an authorized key to open the lock. Cable can be replaced if damaged.

ABLOY FX-Series padlock features the reliable ABLOY Detainer Disc

Cylinder, which is virtually pick-proof and provides extensive masterkeying capabilities. FX-Series padlocks can be masterkeyed together with other ABLOY cylinders. The mechanical operation ensures lasting durability, even in extreme environments. Chrome plated brass lock body provides resistance to corrosion.

Heel and toe locking provides the strength needed to stand up against prying and pulling. The stainless steel ball bearings dead-lock the shackle at both ends for a strong hold.

Standard overall cable lengths are 9", 15", and 21", but custom lengths are also available.

For more information call: (514) 335-9500; Fax: (514) 335-0430; E-mail: Abloycan@aol.com; Web: www.abloy.com; circle 293 on Rapid Reply. **TNL**



Introduction to Master Keying

Locks and Keys

Part 2

GOALS

At the end of this lesson you should know the parts of a lock and a key, the interactive role of the key, keyway, and tumblers in creating a shearline; the specifications of the cuts on a key and manufacturer numbering systems for the cuts; the specifications of the pin tumbler and manufacturer numbering systems for them; understand MACS (Maximum Adjacent Cut Specification) and know how more than one shearline can be created permitting a lock to operate on more than one key.

TERMS

Adjacent Cuts - Cuts on a key that are directly next to each other.

Bible - The top portion of a standard lock cylinder that contains the top chambers.

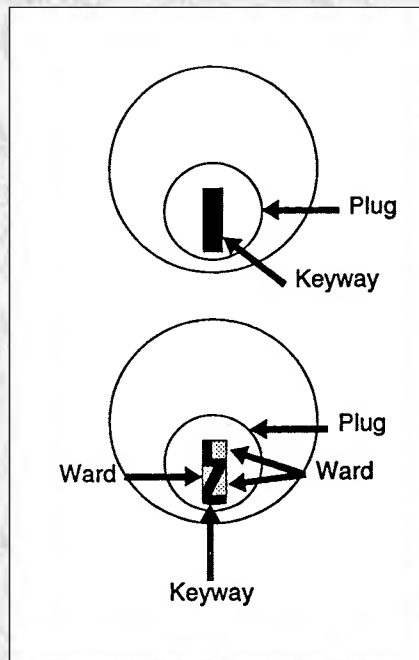
Blade - The part of the key having the grooves and cuts, and is inserted into the lock.

Bow Stop - A key that uses the shoulder from which to gauge the spacing of the cuts.

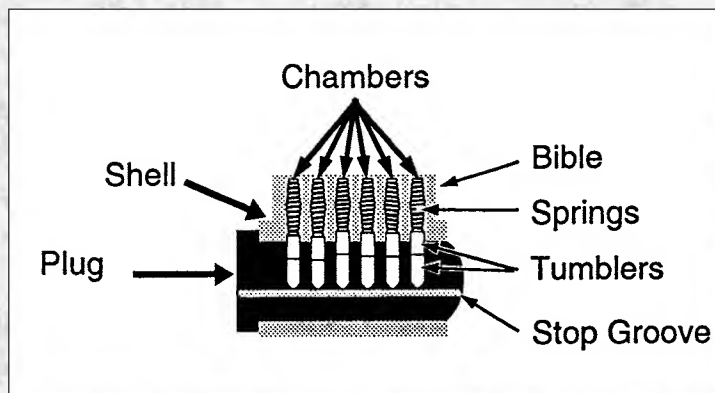
Chambers - The cavities within the plug and shell of a lock that hold the tumblers and springs.

Cut - The portion of key that is cut or removed from the key blade.

Cut Root - The part of the cut that is closest to the bottom of the keys, and serves as the resting point



1. If a keyway were simply a square or rectangular hole in the plug, any number of objects could fit into it. Adding wards to the keyway restricts the access of anything but a key with the right shape.



2. Parts of the pin tumbler lock.

for the bottom tumbler. Also called the flat.

Cylinder Housing - The shell, or outer portion of a lock, usually consisting of the top chambers.

Depth - The measurement of a cut from the bottom of the key or register groove to the cut root.

Flat - The portion of a cut on which the bottom pin rests. Also called the cut root.

Flat Key - A key whose blade has a flat bottom

Grooves - The side millings in a key blade.

Increment - The distance between two successive depths.

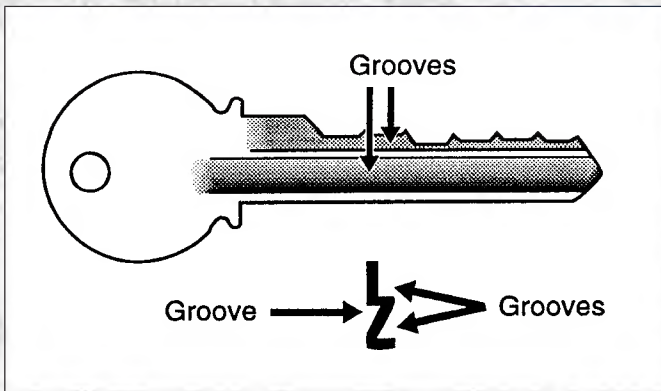
Keyway - The shape of the opening in a plug or the blade of the key the shape; of which both must be the same in order for the key to be inserted into the plug

Land - The part of the key and plug that serves as the point of rest when the key is properly seated into the plug.

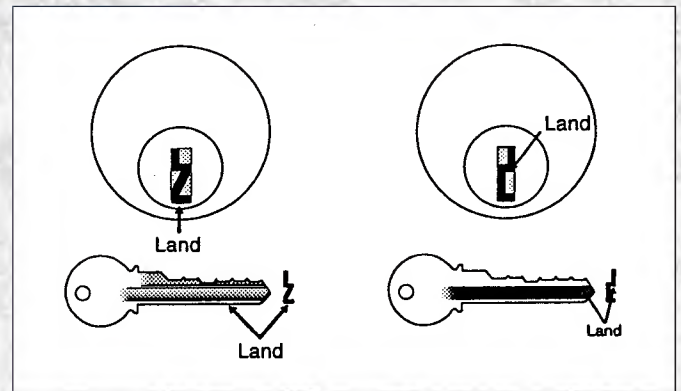
MACS - Abbreviation for Maximum Adjacent Cut Specification.

Pins - A broad term referring to conical shaped tumblers, including bottom, master and drivers.

Plug - The portion of a lock into which a key is inserted and must rotate in order to



3. The key is a piece of material, usually brass or nickel silver, with grooves cut in it that match the shape of the plug keyway.



4. The land is the part of the key that rests on the plug or shell. While most keys use the bottom of the key as the land, some do use a groove and ward as the land.

operate a lock. This portion contains the keyway and the bottom chambers.

Radiused Key - A key whose blade has a radiused or rounded bottom

Register Groove - The groove of a key blade used as the point of reference for measuring the root depth.

Restricted Keyway - Keyways whose sales are limited by a manufacturer in order to prevent unauthorized use of a key system.

Root Depth - The depth of a cut,

measured from the bottom of the key blade or the register groove to the cut root.

Shell - The outer housing or portion of a lock that surrounds the plug and contains the top chambers.

Shoulder Stop - Same as Bow Stop. A key that uses the shoulder from which to gauge the spacing of the cuts.

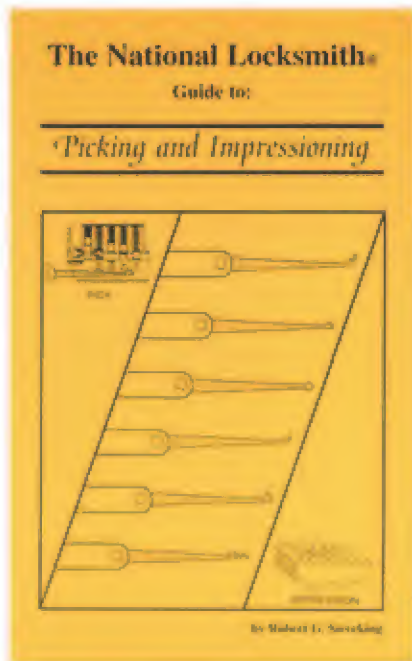
Side Millings - The grooves formed in a key blade after the metal has been removed to create the shape of the keyway.

Spacing - The distance between the centers of the cuts on a key, distinct to the manufacturer's specifications.

Stop Groove - The groove in a plug that stops the bottom pins as they fall into the keyway, stopping them from blocking the keyway.

Tip Stop - A key that uses the tip of the key from which to gauge the spacing of the cuts.

Tumblers - The broad term for varied shaped obstructions that ride on or make contact with a the key and

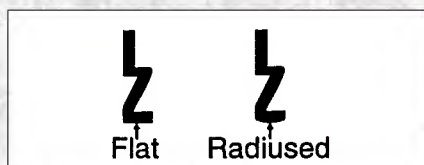


Picking & Impressioning

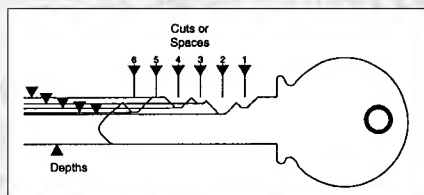
Here is the most complete book ever published on picking and impressioning locks! You will have everything you need to know about how to open almost every kind of lock that can be picked.

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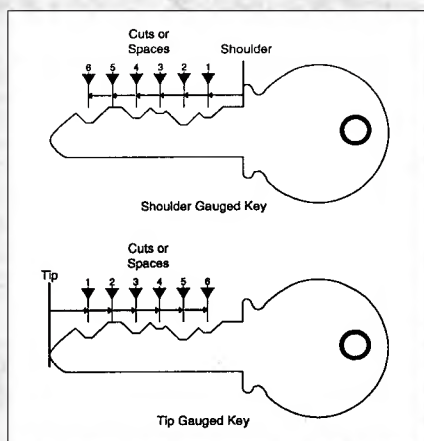
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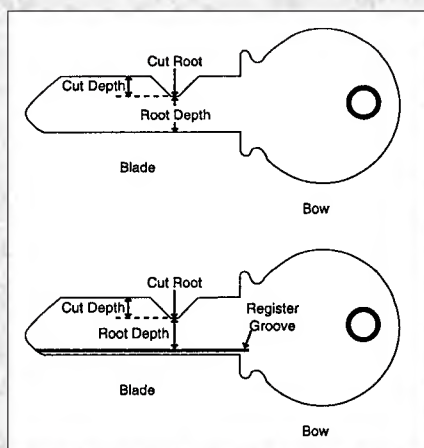
5. Keys have either a flat or radiused bottom. If using aftermarket blanks, it is critical that they match the original manufacturer's specifications.



6. Every cut on a key is measured by a spacing and depth.



7. There are two methods of gauging the starting or first cut on a key. Most keys start the spacing from the shoulder and move towards the tip. Others start at the tip and moves towards the bow.



8. The cut depth is measured in two ways. The most common is to measure from the bottom of the blade to the lowest part of the cut, called the flat or cut root (this is the section of the key that the tumbler rests on). The other method measures from a groove on the key to the flat or cut root.

prevent the incorrect key from operating a lock

Wards - Various shaped obstructions that determine the shape of a keyway.

LOCKS

The first barrier to preventing a key from operating a lock is the Keyway. The keyway is the hole in the lock cylinder's Plug into which the key is inserted, and is designed with ribs or ridges called Wards. (See illustration 1.) These wards project into the center of the keyway, creating a shape or form distinct to its manufacturer. Without them any flat piece of material of the proper dimension can be inserted into the keyway limiting the locks security. In fact, the versatility in creating new keyways by adjusting and moving the shape or pattern of the wards has allowed many manufacturers to create Restricted Keyways. These are keyways having attached legal protection, either through copyrights or patenting, making locks and keyblanks with those keyways available only through the manufacturer and distributors holding those rights.

Once the key has passed into the keyway there is a series of aligned holes in the Shell or Cylinder Housing and the plug called Chambers. These chambers hold and allow movement of the Tumblers or Pins between the plug and shell, with the top chambers of the shell lining up above matching chambers drilled in the plug. The plug chambers are drilled down to a point in the plug called the Stop Groove. This groove is where the pins rest, and prevents them from traveling so far into the plug that they block the key from entering the keyway.

Residential locksets generally have five chambers and sometimes six. Commercial locksets usually have six chambers, but may have five and in some instances seven. The part of the cylinder often referred to as the Bible is actually the shells chambers or the top chambers. (See illustration 2.)

KEYS

Now, in order for our key to pass the keyway it must have Grooves or Side Millings that match the wards of the keyway. (See illustration 3.)

As this key is inserted, the part of the blank that travels or rests on the plug and/or shell is called the Land.

(See illustration 4.)

The land determines where the key actually seats in the keyway. A key may have grooving similar to a particular keyway, but if it does not seat properly it does not work smoothly or may not work at all.

While a groove may serve as a land, more often it is the bottom of the key blade. The bottom may be either Flat or Radiused depending on the manufacturer. (See illustration 5.)

As you begin master keying it is critical that you use the correct keys with the correct locks. If aftermarket keyblanks and cylinders are used (this is not recommended, especially while learning master keying) it is imperative that they adhere to the close specifications and tolerances required by the original manufacturer.

On the key are "valleys" and "peaks" created by the Cuts in the key. Each of these cuts match the manufacturer's specifications for Spacing and Depth and align themselves with the center of each chamber, with the pins resting on the key at the center of each cut. (See illustration 6.)

While most spacing is gauged from the Shoulder or Bow Stop of the key, there are several manufacturers that gauge from the Tip or Tip Stop. (See illustration 7.)

Again, while there are exceptions, most manufacturers start the first space nearest the bow and move towards the tip. For the purposes of this course, we use shoulder stop gauged keys only, with the spacing moving from bow to tip.

The depth of a cut is measured from the bottom of the key blade to the Cut Root and is called the Root Depth. There are some manufacturers, however, that measure from what is called the Register Groove to the root of the cut. This is simply a groove or point on the key Blade that serves as the reference point for measuring the root depth. (See illustration 8.)

While we can relate the depths and spaces in measurements such as inches or millimeters, it is much easier to assign them corresponding numbers. For example, we can cut a five cut Schlage key by space and depth specifications. For example: 1st. space .231", depth .290"; 2nd. space .387", depth .215"; 3rd. space .543", depth .260"; 4th. space .699", depth .275"; and 5th. space .855", depth .275".

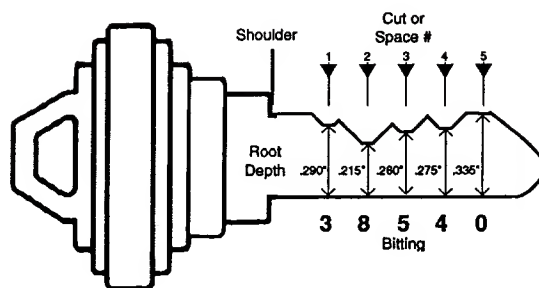
.335". While this is very correct and very definitive, it can be overly involved and confusing should you need to write specifications for more than one key. Instead we indicate spacing and depth through numbers called the key biting. For the key just mentioned we would instead write - 38540. The place in the sequence each number holds is the spacing. The number itself represents the depth. (See illustration 9.)

Lower numbers such as 1 and 2 are usually the shallow cuts requiring little metal to be removed from the key. Higher numbers such as 8 and 9 are usually the deeper cuts requiring a lot of metal be removed. The 0 (zero) cut can be either the shallowest cut (Schlage for example) or the deepest cut (some Corbin/Russwin).

When making cuts, there is a difference in distance from one depth to the next called an Increment. To go from a 1 depth to a 2 depth in our Schlage sample (see illustration 9) is one increment or .015". The difference between a 3 depth and an 8 depth, is .075" or five increments.

Increments vary from manufacturer to manufacturer and most range

Depths		Spaces	
0	.335	1	.231
1	.320	2	.387
2	.305	3	.543
3	.290	4	.699
4	.275	5	.855
5	.260	6	1.011
6	.245		
7	.230		
8	.215		
9	.200		

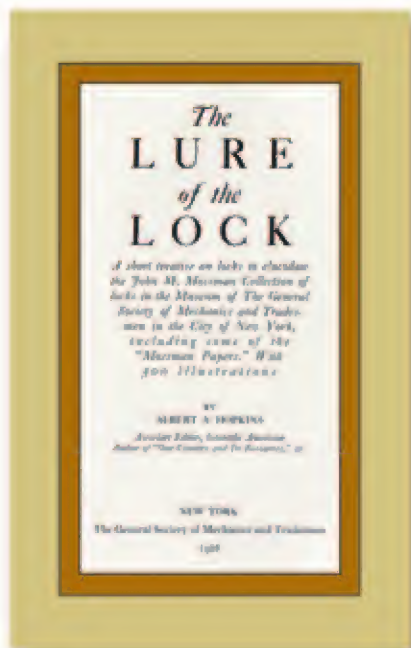


9. To make key cutting easier and more precise, manufacturers assign numbers or a bitting to the cuts on the key that correspond to the spacing and depth specifications. This is an example of a key using specifications from Schlage.

from .014" all the way up to .028". By comparison, a typical sheet of paper is between .003" and .007"; a typical credit card is about .028" in thickness. One increment for a Schlage system is .015" or about half the thickness of a

credit card. One increment in the Corbin/Russwin System 70 is .028" or approximately the thickness of a credit card. (See illustration 10.)

In master key systems, two different keys fitting the same lock



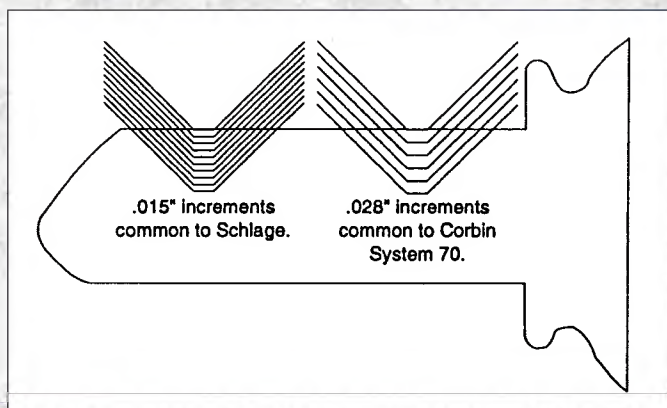
The Lure of the Lock

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#LURE



10. Each manufacturer has their own specifications for the root depth of each cut. The distance or step from one depth to the next depth is called an increment. Schlage has 10 depths, or 9 increments at .015" each. The Corbin 70 System has 6 depths, or 5 increments at .028" each.

must have a .023" difference between them in at least one space. The reason is that even though the space between the plug and the shell is extremely small, keys that are closer than .023" may turn or can be forced to turn the plug. This is especially true of worn or many aftermarket locks and cylinders, or where the original key has been duplicated.

Because many manufacturers use increments of .014", .015", .018" or .020", the difference between the two keys in at least one position must be at least two increments.

For example, Schlage uses a .015" increment and our earlier key bitting was 38540. If another key is different by one increment in one space, the difference does not exceed the .023". Therefore, there must be at least a two increment difference, and in this case a .030" difference, in order for the key to work properly in our system.

The next few key bitting sequences would look like this:

38540 38541 38542 38543

If our next key must have an increment difference of at least .023" we cannot use the key with the 38541 bitting, but we can use 38542 or the 38543.

Could we use 38043? NO! While the last space in the bitting meets our rule, space 3 does not. (*See illustration 11.*)

For every manufacturer there is a maximum depth difference allowed between Adjacent Cuts or cuts that are next to each other. This difference is called MACS or maximum adjacent cut specification. For instance, Schlage has a MACS of 7. This means that no two adjacent cuts, cuts that are next to each other, can be more than 7 increments apart. MACS for the Corbin 70 system is 4.

The reason for this specification is

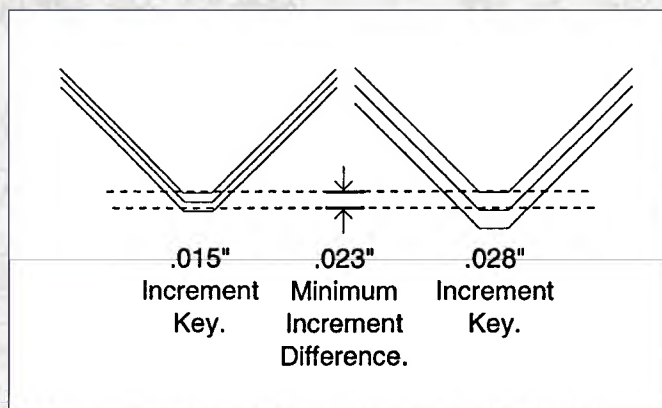
quite simple. If an extremely shallow cut precedes or follows an extremely deep cut, The slope of the cut from the deep cut removes part of the flat from the shallow cut. (*See illustration 12.*)

If too much of the shallow cut is cut away, the pin for that space does not have a base to sit on. By staying within the Macs limits, we avoid keying complications later.

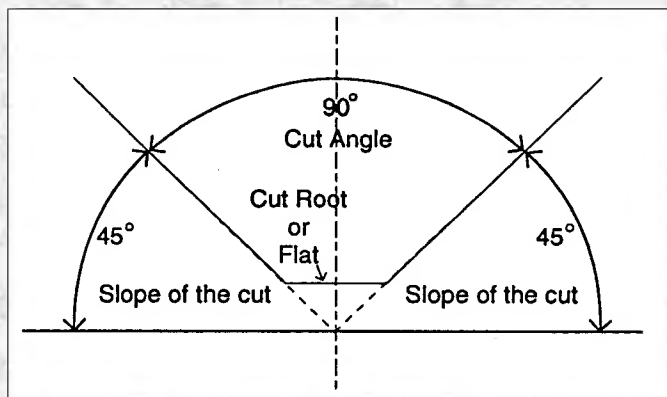
Most locks on the market today use a spacing (center of one cut to center of the next cut) of approximately .156".

When we remove approximately .110" of metal from a key, the side of the cutting wheel touches the flat of the adjacent cut. As we cut deeper and deeper into the key more and more of the adjacent cut is removed.

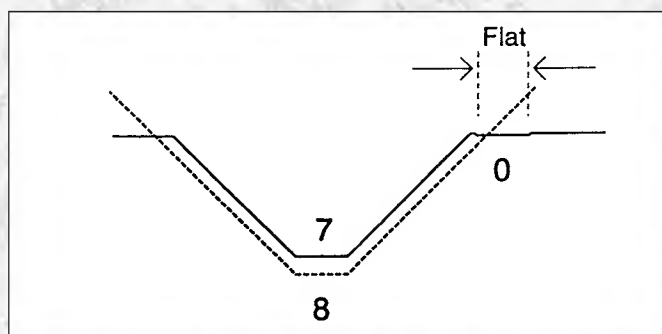
For example the height of a Schlage pin tumbler keyblank is usually about .337". The shallowest cut, a 0, has a root depth of .335". Using a standard .375", Full-V, ninety



11. When master keying, the minimum increment difference allowed for a cut in the same space on two different keys is .023". As seen above, the .015" increment specification (typical of many manufacturers, including Schlage) does not meet the standard. To meet this standard, we make the cut two increments or depths different than the next key.



12. The angles of a cut define the physical limitation of the key, and how it is cut. Different manufacturers require the use of different cutters, each having a specific angle for their particular specifications.



13. With a MACS of 7, an 8 cut next to a 0 cut results in the 0 cut losing some of its flat. This is not acceptable if a master key system is to operate correctly.

degree cutting wheel, if we start from the top of the blade (.337") and cut down .110" deep (root depth of .227"), the edge of the cutting wheel is at the edge of the flat on the adjacent cut. Another .002" deeper and we take metal off the flat of the cut.

Therefore, if one cut is .335", the adjacent cut can be up to .225", or a difference of .110". Anything beyond this difference affects the operation of the key and lock.

On a Schlage key, the root depths are in .015" increments, so

0 = .335, 1 = .320, 2 = .305, 3 = .290, 4 = .275, 5 = .260, 6 = .245, 7 = .230, 8 = .215, 9 = .200

Using the above numbers we see that a 7 depth next to a 0 depth is a difference of .105", and is within the .110" limit for an operating key. But an 8 depth next to a 0 depth is a difference of .120". In this case the cutter removes .010" from the flat of the 0 cut, and the key will not work in a healthy lock cylinder.

Since the 0 depth next to the 7 depth is the maximum difference for cuts that are next to each other, we say the safety factor or MACS is 7 ($7 - 0 = 7$).

Using this safety factor, if we are cutting a 1 depth, the deepest we can go for an adjacent cut is an 8 depth. A 9 depth cannot be used because it exceeds the MACS.

While many of the "rules" spelled out in this course are guidelines, MACS is actually a mechanical principal, and as such, should be considered absolute. (See illustration 13.)

Next time we will cover master keying design limitations.

Material presented is excerpted from the Basic Master keying Course, a course on the principles and terminology of master keying published by *The National Locksmith*. See the order form on page 52 or order it through the online store at www.TheNationalLocksmith.com (\$149.95).

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#SUB - 1,2,3,4,5,6

BEGINNER'S CORNER

Servicing Lever Locks.



by
Jim
Langston

Lever tumbler locks have many uses in light security roles and there are a variety of sizes and shapes available. These locks can be found on desks, mailboxes, lockers, and bank deposit boxes to name just a few.

Basic Lever Lock Design

Most lever style lock consists of five basic parts. (See illustration A.)

1. The cover with cover boss
2. The trunnion or some refer to it as the nose.
3. The lever tumblers
4. The bolt
5. The base

Lever Tumblers

The basic lever tumbler design will consist of four design features:

1. The saddle or belly
2. The pivot hole
3. The spring
4. The gating slot

Some lever designs will also consist of a front trap and rear trap of some sort. (See illustration B.)

On some lever designs, the edge of the lever will have serrated notches on the leading edge. (See illustration C.) If an improper key is used the notches on the lever and bolt post or stump will jam and lock together. Often times the leading edge of the bolt post or stump will be serrated as well.

Manufacturers over the years have developed a variety of lever types; you can see an example of these in illustration D.

The Key

Each part of the key has a specific name and purpose as well. (See illustration E.) The head of the key is the bow, the throat cut is the first notch on the key. The throat cut allows the key to turn past a ward in the cover boss. Once the key is turned you can't pull the key out until it is right back where it started.

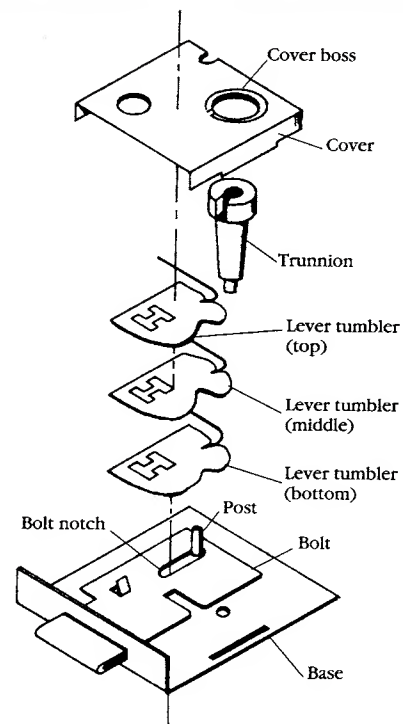
Next are the tumbler cuts, tip stop

and tip. The tip stop cut is the portion of the key which retracts the bolt when the levers are all aligned.

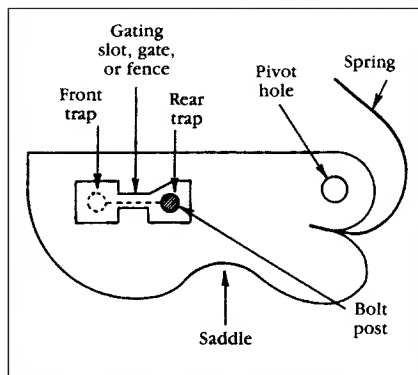
In photograph 1, you can see a basic lever lock in the open position that has been taken apart exposing the components. As you can see the design is very simple.

Impressioning a Key

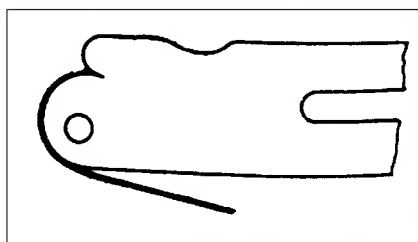
In photograph 2, you can see three different lever locks. The lock at the top features serrated levers as mentioned before.



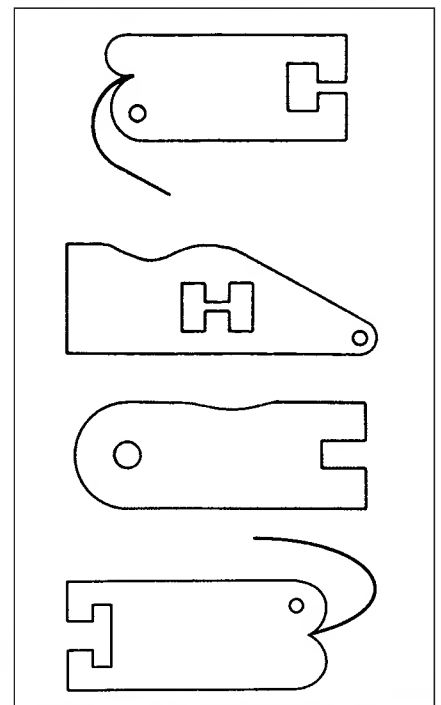
A. Most lever style lock consists of five basic parts.



B. Some lever designs will also consist of a front trap and rear trap.



C. On some lever designs, the edge of the lever will have serrated notches.



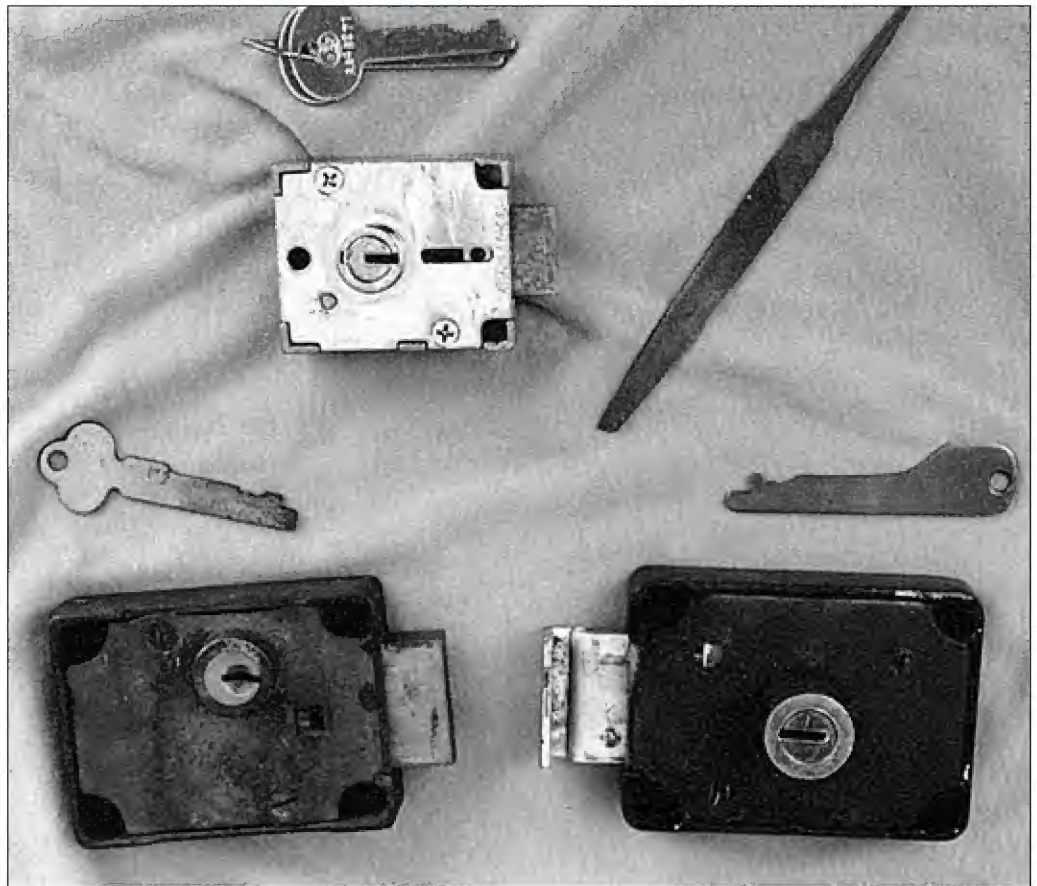
D. Manufacturers over the years have developed a variety of lever types.

This lock is not a prime candidate for impressioning. In fact it will be very difficult to impression such locks.

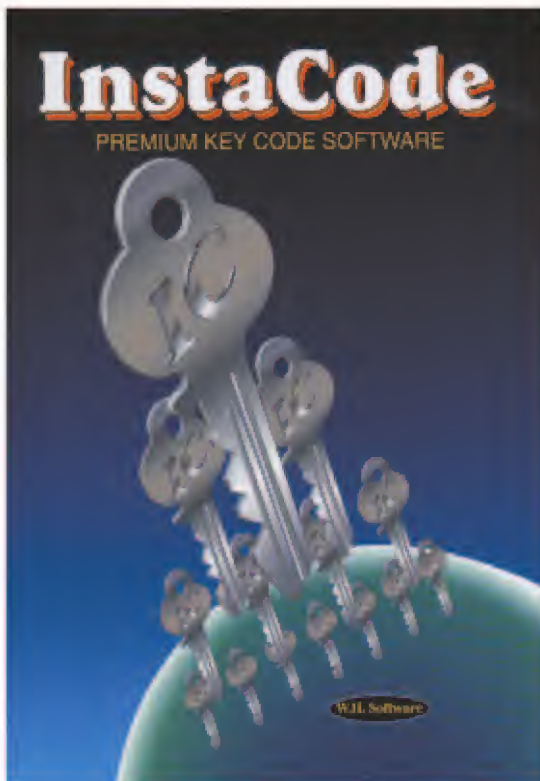
To file or impression a key I use a number 2 cut 4" ward file ,also in this photograph. You can also use a number four cut file if you choose.

Impressioning lever locks is not any different than impressioning pin tumbler locks. The main difference is for lever locks you would use a flat or ward file as opposed to a pippin or round file. The basic procedure is the same.

To begin the impressioning process, I clamp a flat steel key into a 4" pair of vice-grips. Insert the key into the lock and then turn it until it stops. When it stops, wiggle it the same as you would if you were impressioning a pin-tumbler lock to get marks on the key blade. When you take the key out look on the side of the key and there should be a shiny spot where the lever has made contact with the key. It makes



1. A basic lever lock in the open position.



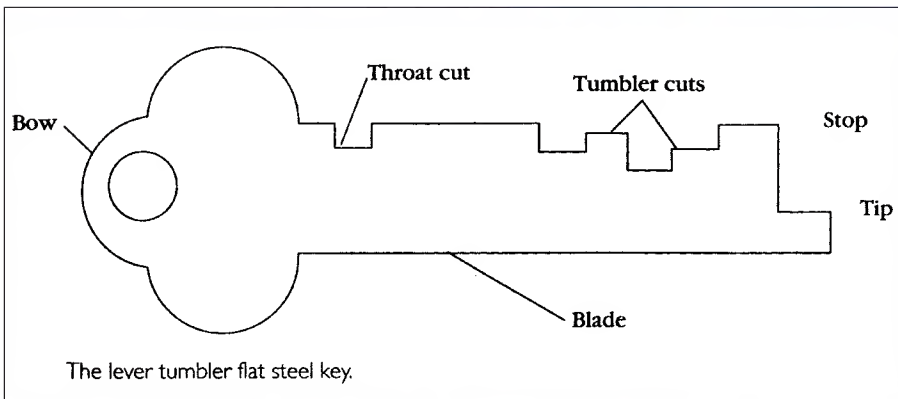
#IC - 2001

InstaCode

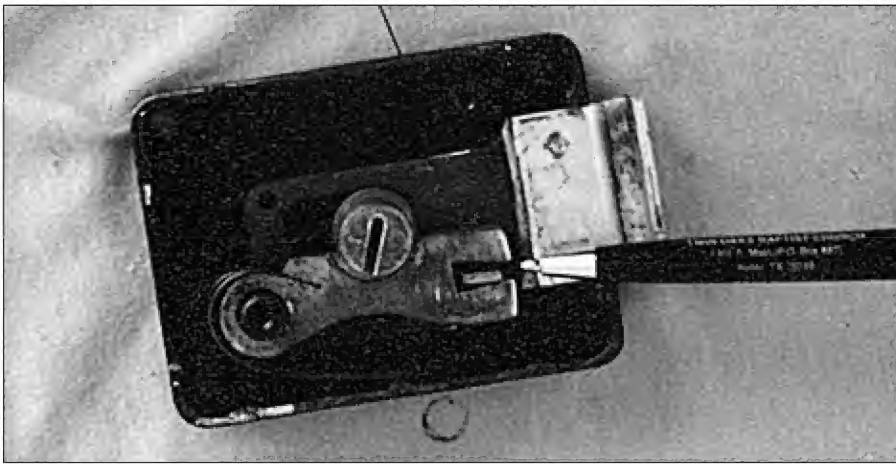
Your total code and code machine management program.



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E. Each part of the key has a specific name and purpose.



2. Three different lever lock designs.

a small mark and may be hard to notice, but this is where you want to file the key.

The View Window

On many lever locks there will be a view window in the cover. (*See photograph 2.*) This allows you to see the post or stump and the relation of the lever gates when the lock is removed. On locks where the cover is stamped to the body this window is of great use when making a key.

To make a key to such a lock, simply fit (or file) the given spaces until the lever gates align with the post. This eliminates the need to pry open the lock to make a key.

Once you start filing the first notch, look into the window and watch when the lever moves down into the lever gate. When the first lever gate is aligned with the post, progress to the next lever until all are aligned with the post. Just remember when doing so to first cut your throat cut or the key won't turn.

Most lever locks are very simple to make keys for. With a little patience and practice you can master the art of making keys for all types of lever locks. **TNL**



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#ASA - 2000

The WIGGLE Side

Long Distance



by
**Sara
Probasco**

The weekend had been pretty quiet, and here it was Sunday afternoon. We were kicked back reading and watching TV when Don answered a phone call, talked for a few minutes, then hung up the phone and reached for his shoes.

"Got a service call?" I asked, glancing up from my book.

"Looks like it. Rhoda's got a customer up at the river, a guy from Houston. They've been floating the river and lost their only set of keys out of a swim-suit pocket."

"People never learn, do they?"

"Sure they do. It's just that there are so many of them out there. You'll notice, we rarely get a repeat customer, up-river. Mostly, it's the ones who've never had the experience that we have to bail out. They just won't believe it can happen to them."

"So, how long to you think you'll be gone?"

"I haven't left, yet. They have a fairly new vehicle, so I gave them the eight-hundred number for Roadside Assistance. I should hear back in a few minutes. Meanwhile, I'm going out to the van and check on key blanks for that model. Give me a holler when they call."

An hour passed. The phone rang again. Another long distance call.

"Was that Roadside Assistance, at last?" I asked.

"Nope. It was the guy who lost his keys, wanting to know if I was on my way up there to help him."

"And you said...?"

"I told him I never got the call-back from Roadside, and I can't come without a purchase order number, unless he wants to pay me, himself. When he said he'd rather not have to do that, I suggested he call them again and find out what's going on. This time, I told him to specify that he wanted them to contact me."

Another hour passed. The man at the river called again.

"Look, they told me they'd already called a locksmith and somebody should be there by now. Are you coming, or not?"

"I haven't heard a thing from Roadside," Don assured the man. "As soon as they call me, I'm on my way."

"Is there another locksmith around there that they might have called?"

"I'm the only locksmith anywhere near you," Don said. "Why don't you try calling them one more time and ask who they called and where they're located. That way, maybe you can at least pin down who you're waiting for."

Another service call came in and Don was answering it when the next call came from the man who had lost his keys up-river.

"Roadside says they called a locksmith out of Kerrville. Some outfit by the name of Rainbow something-or-other. They were supposed to have started this way about an hour and a half ago."

"My word," I exclaimed. "Kerrville is about ninety miles from you. I can't imagine why they'd call somebody that far away, when we're on their regular call list. Well, thanks for calling. If anything happens that they don't get there, let us know and we'll see what we can do to help you."

I had scarcely hung up the phone when it rang again.

"This is Roadside Assistance," a man's voice said. "We've got a customer stranded without keys in the Garner Park area. Can you take care of him for us?"

Figuring that somebody had made a mistake, somewhere along the way, and Rainbow something-

or-other was not en route, I agreed to handle the call and got all the pertinent information from the dispatcher. I called Don, who was just finishing up the other service call, and got him started up-river.

The phone rang again. This time, it was Rhoda again. She owns one of the river camps, and we have frequent contact with her during tourist season. It was she who had first contacted us about the man who had lost his keys.

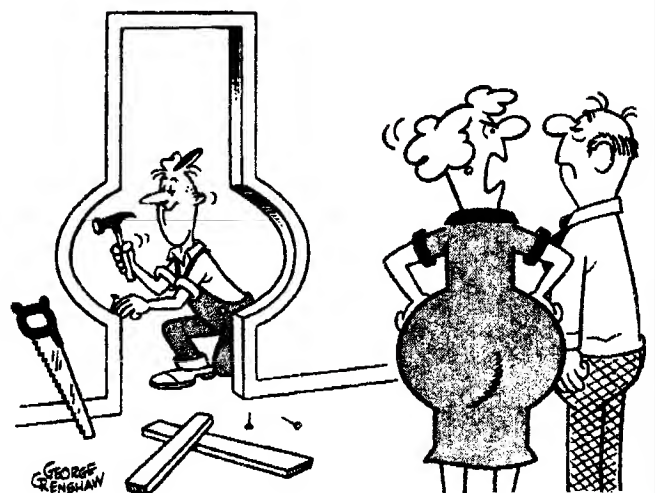
"Sara," she said, "there's Rainbow something-or-other tow truck up here all the way from Kerrville. The driver says Roadside called him to get a vehicle open. I don't know what to do. We've been waiting for Don over two hours, now, and my customer is getting real impatient. This wrecker fellow says all he was told to do was get the vehicle open. He doesn't know anything about making keys from scratch. And now he's making noises about towing the car back to Kerrville."

"What does your customer say?" I asked.

"He's about to have a stroke."

"Well, I finally got a call from Roadside less than ten minutes ago, and Don is on his way. Should he come, or not?" I asked. "I can turn him around, if you want."

"Just where did you hire this carpenter?"



Continued from page 76

"Gee, I don't know what to say. This other guy's already here, but I really don't think he can do the job. If Roadside called you, and Roadside called him, who's gonna get paid for the job, if you both come?"

"Looks to me like that's Roadside's problem. All I know is, I have a purchase order number from them, so I'm not worried about getting my money. Tell you what: let me call Don on his mobile phone and advise him of the situation. Then I'll have him give you a call. Whatever y'all decide is cool with me."

By the time I got hold of Don, he was in sight of the stranded vehicle and the Rainbow something-or-other tow truck. It was too late for him to turn back, so I left it with him and hung up the phone.

The phone rang. This time, it was another dispatcher from Roadside.

"The is Roadside Assistance," the woman's voice said. "We've got a customer stranded without keys in the Garner Park area. Can you take care of him for us?"

"Whoa there," I said. "Our locksmith is already on the job site for one such customer of yours." I went on to describe the vehicle make and model, the customer's name, and the exact location. They all checked out with her information.

"I can't understand this," she said. "The turkey who called you obviously didn't enter the contact into the computer. That's strictly a no-no."

"Well, let me tell you something else," I offered. "Before contacting us, somebody with Roadside called Rainbow something-or-other wrecking service, out of Kerrville - nearly ninety miles from the job site, and I just learned they're already there. They understood it was a simple lockout, and they can't handle the job. Our man is already on site and will be happy to take care of everything for you. What I want to know is, how come you didn't call us first, as you usually do?"

"Gee, I don't know," the woman replied. "I'm new at this. What did you say the name of your company is?"

"Look, you're the one who called me, remember? I'm A-1 Lock & Key, Uvalde Texas, and we've been handling all your customers within a sixty mile radius for nearly fifteen years."

"You're in Texas?" she asked.

"Yes. Where are you?"

When Don came in, I listened to his story, then he listened to mine.

"Can you believe, because she was somewhere in California, she thought we were, too?" I said.

"Well, I hope you got her straightened out," he replied.

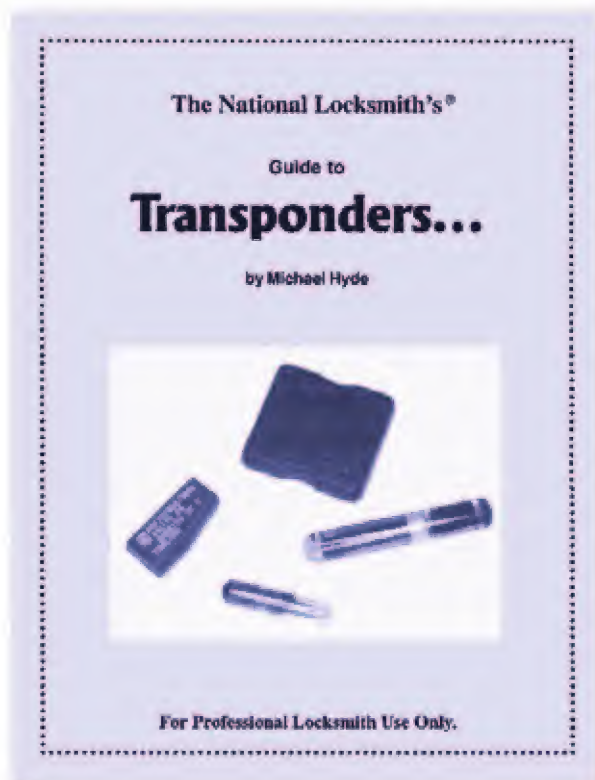
"I did, indeed. I'll be sending her and the Roadside main office maps of Texas, complete with a gold star strategically placed over Uvalde and large circles

around us, showing the radius our service calls cover."

"That should help."

"Yeah," I said. Then I couldn't help adding, "Besides, once Roadside gets both bills and compares the mileage and trip charge, I don't think they'll be calling Rainbow something-or-other Wrecking Service back to Garner Park any time soon." **TNL**

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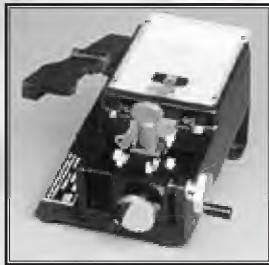
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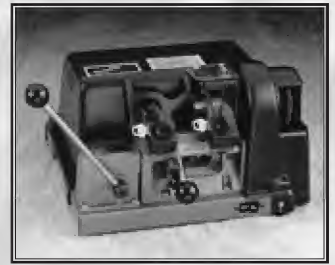
1st Prize

HPC's 1200PCH
Punch Machine



2nd Prize

Mas Hamilton's Auditcon
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3rd Prize

Curtis 2100 Duplicator



4th Prize

SDC Magnetic Lock, Keypad
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5th Prize

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7th Prize

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8th Prize

\$500 in Strattec Auto
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9th Prize

Arrow Exit Device and
Mounting Kit



10th Prize

Dewalt Cordless Drill



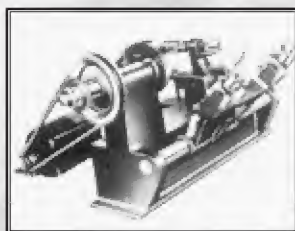
11th Prize

Detex ECL-8010W
Wetlock®



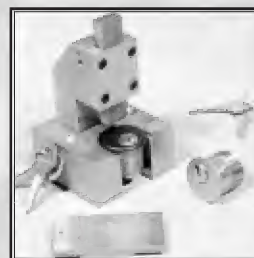
12th Prize

Securitron DK-26 Touchpad
and CPU Board for
Magnetic Lock



13th Prize

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15th Prize

S&G 6120
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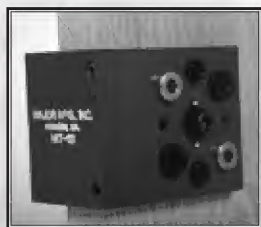
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 Slide Lock's
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19th Prize
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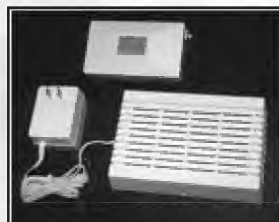
21st Prize
 Falle Pick Set From Mark
 Bates Associates



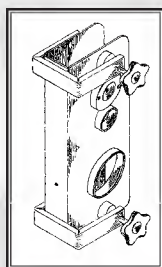
22nd Prize
 Sieveking Products
 Squeeze Play



23rd Prize
 ABUS Padlock's Marine
 Padlock Display



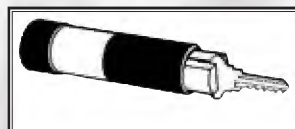
24th Prize
 Rodan's AV 100 Heavy
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25th Prize
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28th Prize

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**BWD KWIKIT WINNER:
Eight Minute Escort
Ignition Removal**

Having agonized over the removal of Mazda-style ignitions in 1991 and newer Ford Escorts, I decided to see if there was a way to remove one from the column in less than the forty-five minutes it normally took me. Finally, I developed a removal method for these ignitions that with a little practice, allows me to remove one in less than eight minutes!

Rather than do a normal teardown I made a roll pin removal tool from an old round file I had in my toolbox. I broke the tip off the file and then broke off the last three inches. After sanding, to remove the obvious burrs, I now had a roll pin removal tool. The length of the tool is important! Too long, and it will touch the lower dashboard panel and possibly break, so be careful.

To use this tool, I removed the two-piece shroud from the column. Looking at the ignition, you can see two large roll-pins. Use the modified file and "screw" it into the forward-facing pin, snugly but not tight. Clamp a small pair of Vise-Grip® pliers to the wide end of the file. Now, gently tap the pliers away from the lock with a hammer. If the file pulls out without the pin, screw the file in a little tighter. Repeat tapping with Vise-Grips until the pin is removed by the file's tip. Repeat this procedure for the downward-facing pin.

Next, with a long-shank Phillips screwdriver, go from the top of the column down to the top mounting screw for the shift interlock (if so equipped). Remove this screw. Then use a small jeweler's Phillips screwdriver and remove the other screw from this device (pointing forward and down a bit). Lift the interlock up, to the side and away from the lock assembly.

Now, put your thumb over the "lock" position on the cylinder's faceplate and slowly back the lock cylinder out from the housing, making sure to trap the spring in the cylinder, you'll need it for re-assembly. If the spring does fly out, an ignition spring from a Ford 8-cut lock (the ball bearing detent spring) will substitute nicely, with 2-3 coils cut off with side cutters.

With the cylinder now out, repair or replace as needed and reverse the above procedure for re-assembly. I

88 • The National Locksmith

Jake's Jabber...

Recently, I came across a book titled: "The Principle of Multiple Redundancy." Basically, The Principle of Multiple Redundancy stipulates that "The same end may be achieved or arrived at by an infinite number of means." This column is, in my mind, the proof of that statement. Why? Because there are an infinite number of means submitted by tipsters for doing any number of tasks that we encounter everyday.

For instance, I never realized how many different ways I could be told I was full of horse feathers until I started editing this column about five years ago. Just kidding!

All the people that have contributed their ideas, tricks and tips to this column have shown me just how many different ways there are to solve a given problem. Everything from making tension wrenches to shims and plug followers, to modifying tools, equipment and locks to achieve a desired result. It's fascinating to see how creative and original some people really are.

Over the years some have suggested the design of a new tool, and today their suggestions are being manufactured and sold by A-1, HPC and others. There have been thousands of tips and tricks that have been utilized by thousands of locksmiths around the world. Each one makes of our jobs just a little easier. Many of those tricks have been proof that there truly is an infinite number of means to arrive at a given point. Whether that point is picking a Kwikset lock, opening an automobile or aligning a tailpiece to enter a panic device.

Keep those cards and letters coming. I can't tell you how many of you have taught this old boy a trick or two. At the same time, by sending me your trick, tip or idea, you have shown thousands of other locksmiths something new or a different way of doing an everyday task. For what you have taught me, I thank you. For what you have shown others, I thank you on their behalf.

Now, doesn't it make you feel kinda warm and fuzzy to know that your tip could be the very idea that another locksmith needs to make their job a little easier? Just remember this, whenever you send a tip either by E-mail, Snail Mail, fax or Federal Express, make sure to include your name, physical address and phone number. Otherwise, you won't get the prize(s) that you'll win when your tip gets printed. That's called, "The Law of Unintended Consequences."

See y'all next month!



**by Jake
Jakubowski**

find it helps to use tweezers to hold the screws and pins steady while I screw or tap them back in place.

*Frank Alexander
Florida*



**WEDGECO™ KEY
EXTRACTOR KIT WINNER:
Broken Turn Signal
Spring Repair**

While making a GM ignition key, how often have you found one or both of the turn signal canceling springs broken? It's money in the bank if you stock a few extra springs, which cost thirty-eight cents. The part numbers are 1964784 and 1964785, respectively. The springs are "handed" one for the right, and one for the left.

It is an easy fix, requires no special tools or skills, takes just a few minutes and adds to your profits. The nice thing is that most customers will

gladly pay extra to remedy the problem of their turn signals failing to cancel after making a turn.

*John Lee Wright
Iowa*



**STRATTEC RACING
JACKET WINNER:
Mini Mag Loading
Tool**

As you know, the Mag Silhouette can make an excellent lighted plug follower. With the modifications I have listed and the accompanying *illustration 1*, you can see what a great top pin loader this handy little flashlight can make.

First, as seen in *illustration 1*, use a round, or Pippin file, to notch the light across the lens as shown. Next, cut a clear rubber bumper in half (it can be obtained at your local hardware store and are used to dampen the sound of



Illustration 1.

cupboard doors, or to place under glass table tops, etc.) and glue the bumpers on the lens with a two-part epoxy resin. Before gluing the bumpers to the lens, you should shape the cut edges so that top pins will easily fit in the center.

Place a small vinyl dot in the center of the lens to act as a glare shield and prevent too much light from causing a glare when you look down the barrel of the lock cylinder. Then place a 9/16" "O" ring or rubber washer on the shaft of the flashlight to act as a stop for the cylinder you're loading.

NOTE: After loading the top pins, you will need to follow the Mag out with a standard hollow follower.

Next make a loading tool out of 1/8" inch rod. Bend a 90° angle at one end of the rod, about 1/4" long and bend a 90° angle at the other end about two inches or so in length.

On the longer bend, you can use heat shrink tubing to give you a better grip when using the loading tool. The tool allows you to keep your hand out of the way so you have an unobstructed view down the barrel of the cylinder.

To use the lighted follower, turn the flashlight on, insert it into the cylinder and align the "trough" between the two halves of the rubber bumper with the first pin hole in the bible. Drop in a spring and push it into place with the loading tool. Then, drop in a top pin and use the loading tool to push the pin above the shear line. Once the pin is above the shear line, move the follower to the next hole and repeat the process. *Dennis Harmon Colorado*



HPC AIR WEDGE™
WINNER:
Punching Tool Box
Keys

I purchased HPC's 1200 Punch machine and since then, I've been doing quite a bit of key cutting for the small utility locks found on most truck toolboxes, and travel trailers. However, not without some adjustments to the actual spacing on the code card in the 'CH500' series, utilizing the B1 and Y12 keyways,

since the cuts as shown on the code card do not align with the wafers within the lock.

The first solution I came up with was to expand all the cuts by 1/2 the normal spacing. That one worked perfectly. Then a customer, referred by my local hardware store, brought me a toolbox lock and I had to decrease each cut by half a space! Seemingly, these two situations defy logic. Regardless, I was able to send both customers happily on their way.

*Willie Bowen
Virginia*

Editor's Note: Willie, thanks for sharing

your solution to a seemingly illogical problem. The cause of your confusion has nothing to do with HPC's Punch Machine or the Code Cards. The locks that you were working on were most likely imports or knock-offs of branded cam or wafer locks. It is not unusual to find Yale and other keyways used in those locks and discover that although the depths are the same, the spacings may vary greatly. I have found many instances of that very problem in O.E.M. mortise, key-in-knob, wafer and cam locks that originate in the Orient. Frequently, you will be given a key that has a direct code on it and if you cut it on your Punch Machine, the key will not

Ask Dave



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#AD - 1

work simply because of the disparity in the spacings.

**SARGENT & GREENLEAF 4400
 SERIES SAFE DEPOSIT
 BOX LOCK WINNER:
 Jimmy 10-cut Tip**



If you have to service GM's 10-cut ignition and disconnect the battery before removing the ignition, you might encounter a problem like I experienced on a 1997 Jimmy. I don't know how many other models may be affected.

After removing the switch and servicing it, I replaced the repaired switch, re-installed it in the column and turned the ignition to the "start" position. When I turned the key back to the lock position, it wouldn't turn back all the way and I was unable to remove the key! I found that the battery had to be reconnected before the switch would return to the locked position for key removal. Once the battery was reconnected, the "problem" was solved.

I'm just happy it wasn't a cold winter day and the customer had left his lights on, killed the battery and called me because his key was "stuck." Should that happen this winter, I'll know how to solve the problem.

*Tom Perkins
 Wisconsin*



**A-1 SECURITY
 PRODUCTS WINNER:
 Eliminating JU5
 Hinge Callbacks**

Have you ever been called back after installing a pair of JU5 hinges because the door does not close? I have and here's how I

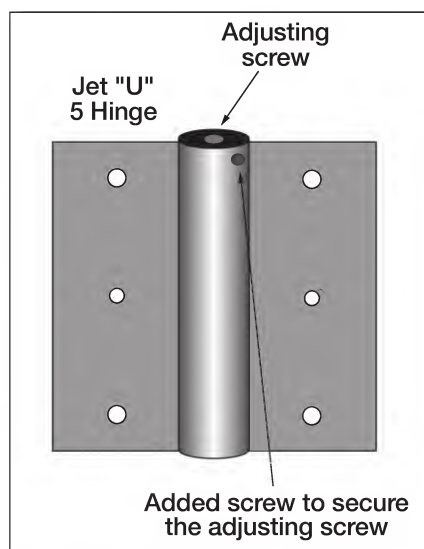


Illustration 2.

eliminated the problem that caused the callback.

These hinges have a vertical adjustment screw to raise or lower the door. The screw rests on the rotating hinge pin on the top hinge only. With normal use of the door, this screw starts to loosen and the door is lowered. Eventually the door may not close properly because it is dragging on the threshold.

To solve the problem and prevent costly callbacks, I drilled - after removing the adjustment screw - a 5/32" hole below the top edge of the hinge's barrel approximately 3/8" deep, or until the drill entered the adjustment screw's hole. (See illustration 2.) Using a 1-24 x 5/16" tap, I tapped the hole to accept a 10-24 x 5/16" Allen set screw.

After replacing the adjustment screw, I inserted and tightened the Allen screw against the adjustment screw. No more callbacks!

*Antonio Gomez
 New York*



**ILCO KEY BLANKS
 (100) WINNER:**

Vent Window Opening Tool

If you remove the bail from the master cylinder in an older salvaged car, you will find that the bail is perfectly formed to open vent windows.

One end will work on the left side and the other end will open the right side by releasing the button and turning the handle at the same time.

*Marvin Golden
 E-mail*



**KEEDEX "SPIN OUT"
 SCREWDRIVER WINNER:
 Sliding Glass Door
 Security**

I had a customer that locked herself out of the house after exiting through a sliding glass door. Even though it was locked, the glass door lifted right out of its track and allowed me to gain entry to the premises.

Seeing how easy it was to defeat the lock on this style door, the customer asked me if there was a way to make that door more secure.

As you can see in I used a small screw and lock washer to build a

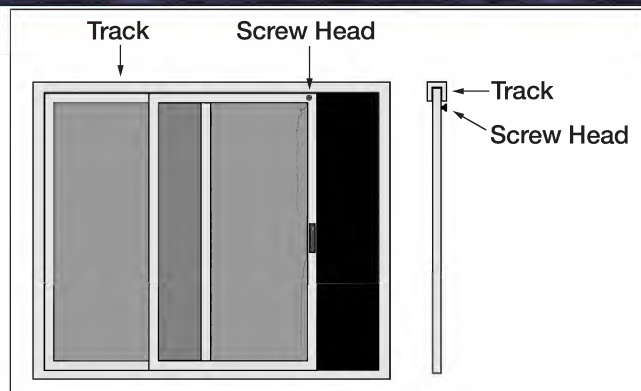


Illustration 3.

"stop" on the header rail that prevents the door from being lifted far enough out of its track to prevent unauthorized entry. (See illustration 3.)

In the event someone tries to lift the door out of the track, the screw and washer hit the top guide rail and prevents the door from being raised any higher or lifted out of the track.

*David Graig
 Illinois*



**TECH TRAIN
 TRAINING
 VIDEO WINNER:**

Isuzu NPR Box Van Key

After duplicating a customer's key onto a B-65 blank and finding that it didn't work, I checked the original and found a code on the side of the key. After looking up the code and cutting the key on my code machine, I found that key didn't work either.

Taking the code cut key and the duplicate key I had made earlier, I went out to the truck and found that the shank of the B-65 blank was too wide to allow the key to completely enter the keyway.

Illustration 4, shows how I modified the B-65, by filing, so that it would fit the locks on the truck. Obviously, I had used the wrong blank, but the code series told me that the B-65 was the blank to use. Regardless, I solved the customers' problem.

*Dave Mathewson
 Florida*

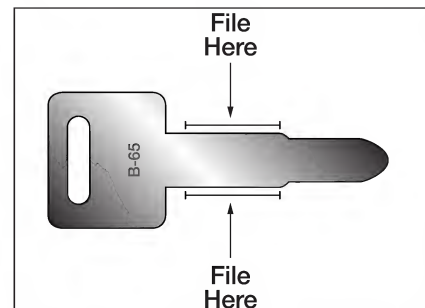


Illustration 4.



SIEVEKING
PRODUCTS GM E-Z
WHEEL PULLER
WINNER:
**Business Card/
Spare Key Case:**

Here's a tip that satisfies the customer question of where they should put their spare key. Until I came up with this idea, I invariably recommended they put their spare vehicle key behind the license plate. But, I think this is a better idea.

Use a fold over business card and all you need to do is laminate the card as shown in *photo 1*. Just be sure to

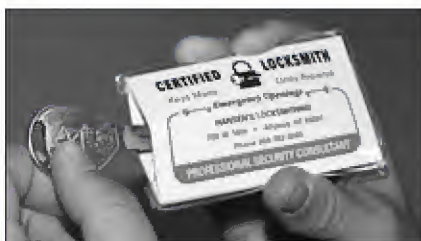


Photo 1.

trim one end so that the laminated card forms a pouch. If you use a regular business card, then put two of them together and then laminate. Again, be sure to leave one end open.

The result is that the customer now

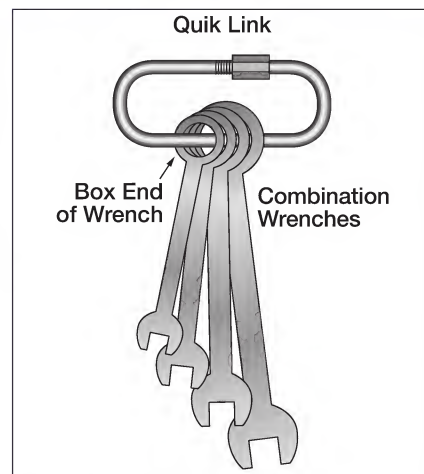


Illustration 5.

has a special "key case" with your name, telephone and address on it that will fit in the credit card section of their wallet or purse. The customer can carry the spare key conveniently and have it accessible on a moment's notice.

When you laminate a card(s) to make a key case, make sure you do not trim the laminate too close to the edge of the card or it will not hold. Also, the card and laminate around the key protects the wallet or purse in which the key is being carried.

*Eugene Hansen
Nebraska*

Major MANUFACTURING, INC. MAJOR
MANUFACTURING, INC. PRODUCTS
WINNER:

Combination Wrench Keeper

Once the vinyl pouch that my combination wrenches came in gave up the ghost, I was constantly searching for a wrench when I needed one. Then I came up with the idea that you see in *illustration 5*. Now I have all my wrenches in one place where I can get my hands on the one I need, when I need it. Often, I don't even have to take the wrench off of the ring.

I bought the Quik-Link with the threaded nut at my local hardware store for a couple of bucks.

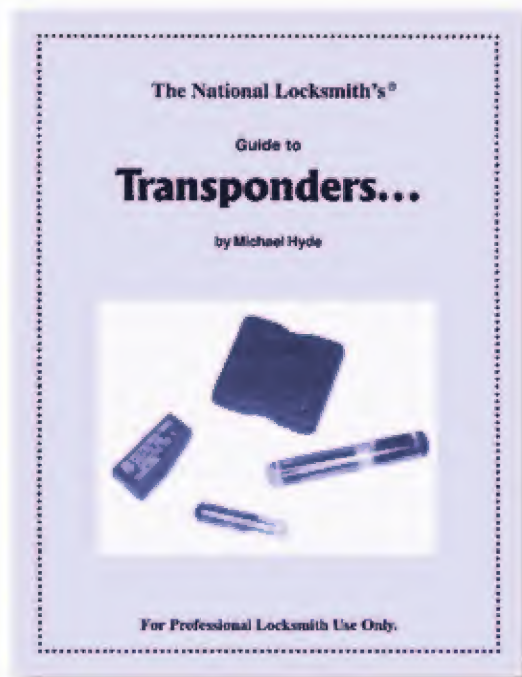
*John Marske
California*



SLIDE LOCK'S "Z" TOOL
OPENING SET WINNER:
Quick RV Keys

I used to try to impression the Bargman flat paddle handle locks, but kept breaking or bending wafers. I find that it is as quick or quicker to remove the lock from the door (there are four screws on the inside of the door and two through the door edge), and pick the cylinder (to the right) to

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the unlocked position. Once picked, depress the retainer, dropping the plug into your hand.

All you have to do then is insert a blank, sight read the cuts and cut the key accordingly. Believe me, it only takes a few minutes and I truly feel it's the fastest way to generate a key for these locks.

*Ruth Davis
Texas*



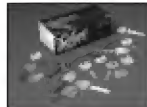
**THE SIEVEKING AUTO KEY
GUIDE WINNER:
Ford Ball Bearing Trick**

I hope you find this trick for replacing the ball bearing detent in Ford 8-cut locks useful.

I bought a nail-setting tool at my local hardware store for about a buck-and-a-half. The kind that has the little indentation or dimple in the tip. If you apply a little dab of grease to the dimpled end of the nail-set, it will hold the ball bearing in place while you insert it in the cylinder.

Simply place the ball bearing in the grease, place it over the hole and spring and push down while rotating the plug. No more dropped ball bearings and no more flying spring.

*Ed Hamm
Illinois*



**JET KEY BLANKS
(100) WINNER:
Jammed Mercedes
Boot Lock**

A Mercedes had a jammed boot (trunk) lock mechanism that would not allow the key to work. I tried several methods to open the trunk and nothing worked. Then I took out the back seat and found that under the speaker shelf a hole is pressed out of the body and you can see into the boot.

Unfortunately the boot shuts down on top of the bolts that hold the lock mechanism on, but there is still enough room to get a spanner (wrench) in between the lid and the bolts. I have a 1/4" square bar, about a meter long, that I use for just such situations.

The bar has a hole drilled in one end which allows me to bolt a spanner to it and reach into tight places, like the Mercedes' boot.

The boot opened when I removed the bolts from the lock. It was then simply a matter of removing a stray piece of metal that had caused the lock to jam and re-installing the lock.

The metal bar I mentioned could also be used as a long socket wrench

extension for reaching difficult bolts that might be used to secure a lock to the boot lid.

*Vic Toonen
Australia*

Editor's Note: Vic, I appreciate the tip but would like to know what model Mercedes you were working on since, as far as I know, Mercedes closed up the "holes" into the boot from the passenger compartment on newer models. I know that removing the speaker on older models was a quick way to access the boot to retrieve keys, but I've never heard of anyone removing the latch this way. Good idea.



**HIGH TECH
TOOLS WINNER:**

Double Duty for an Ac-U-Temp

When installing locksets, I use the Ac-U-Temp template to obtain and mark accurate bore hole locations quickly. As anyone who has ever used one of these tools can testify, it is a handy, workable tool.

After using my Ac-U-Temp I accidentally discovered that the Ac-U-Temp can also be used to locate drill points when installing cabinet locks.

Illustration 6, shows how to use the Ac-U-Temp to locate drill points for

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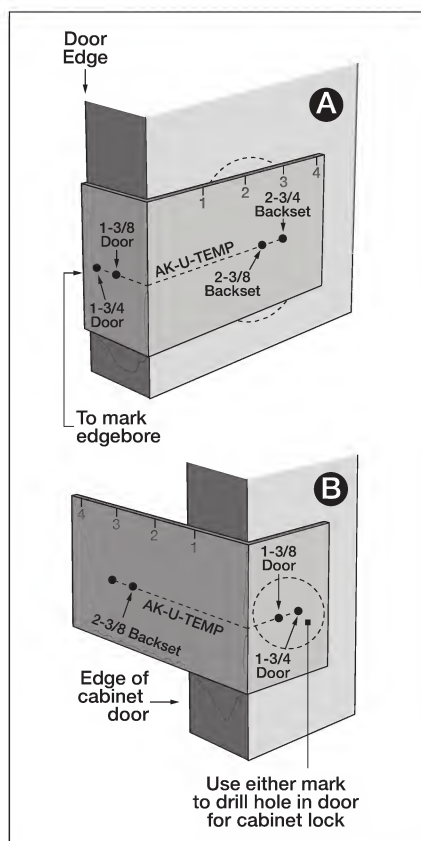


Illustration 6.

deadbolts, key-in-knob locksets and cabinet locks (with a 3/4" backset) as well.

*John Marske
California*



LA GARD COMBO GUARD
WINNER:
**Sargent Control Key
Trick**

I frequently see and hear people asking about removing Sargent IC cores without the control key. The response almost always seems to be picking. This is about 200% luck because there are three factors working against this.

First, there is about 20 different possible combinations in the 3rd and 4th chamber, with only one of those being the control shear line. Second, when the core is part of a master key system, the 3rd and 4th cut on the control key are often very deep cuts so as to avoid conflict with the various change keys in the system, making that particular shearline difficult to pick. Third, the control sleeve is reversible. The cores come from the factory with the control bar on the right, so counterclockwise tension is needed to pick the control shearline; but cores are often re-assembled backwards making it complete guesswork as to which way to pick the cylinder.

With all of these factors in mind, odds are very high that you will pick the cylinders operating shearline 500 times before you'll get the cylinder out.

Here is an easy and very efficient way to do it:

Write down the bitting of the master key. For example: (334353).

If there is no system use the change key bitting.

Progress the 3rd and 4th column (see example) to get the 16 possible changes.

1. 330153	6. 332553	12. 338753
2. 332153	7. 336553	13. 330953
3. 336153	8. 338553	14. 332953
4. 338153	9. 330753	15. 336953
5. 330553	10. 332753	16. 338953
	11. 336753	

Next eliminate any key, or keys, exceeding the maximum adjacent cut differential, which is 7. This would result in discarding the number 1, although the possibility exists that the creator of the system did not observe MACS.

Now, on your code machine, progression four keys as follows: First key use combinations 2, 3, 4. Second key, use combinations 5, 6, 7, 8. Third key, use combinations 9, 10, 11, 12. On the fourth key use combinations 13, 14, 15, 16. One of those four keys should be the control key unless the cylinder has been pinned to an oddball bitting.

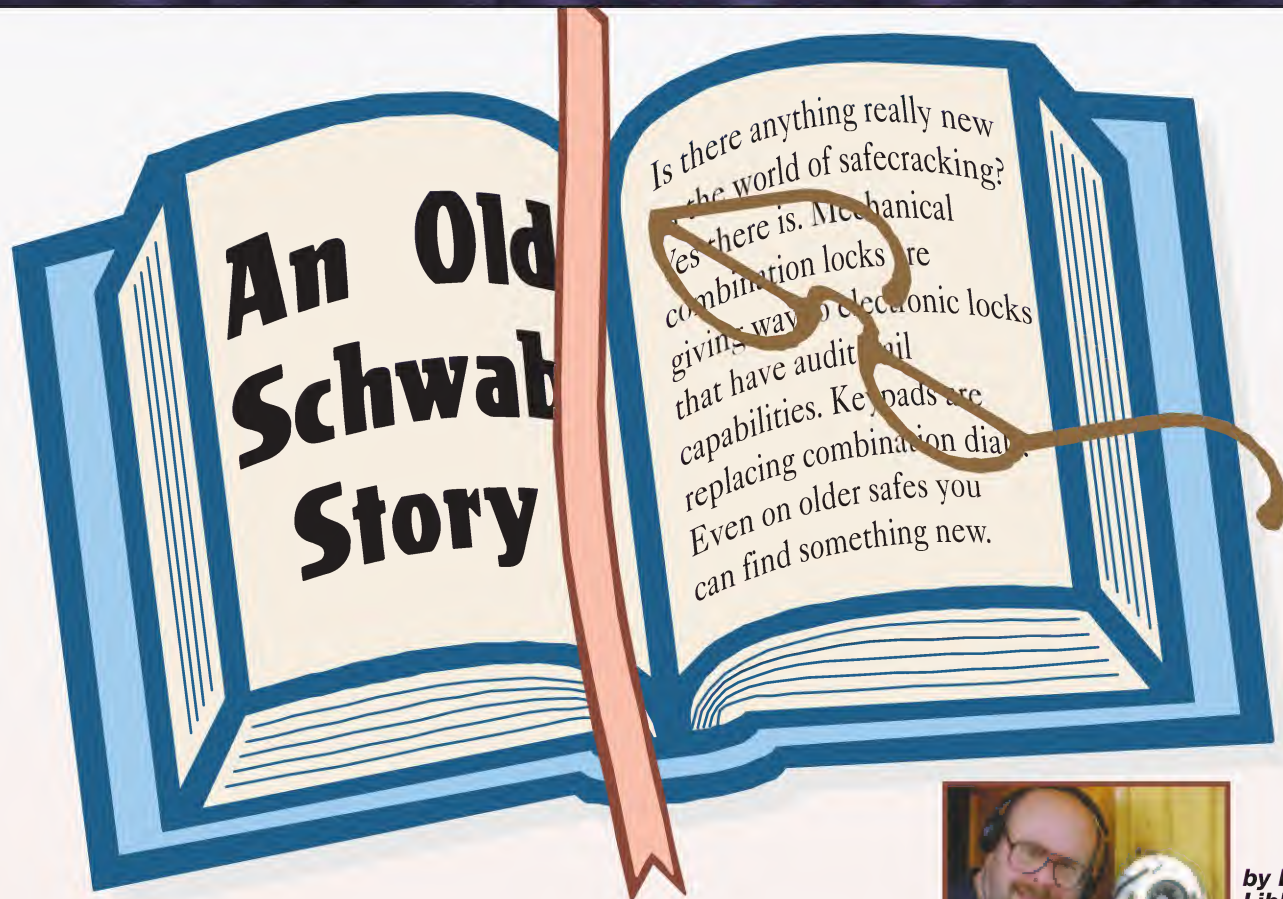
Try each key in the lock. Be sure to turn each key in both directions as the control sleeve may be reversed. One of the keys should be the control key and the others could be "ghost" keys. So, once you determine the control key, destroy the remaining keys.

This is a sure way to save time and to look professional, especially if there are many cores to work with. Don't be surprised if several of the cores have different control keys than others. Different locksmiths may have installed those cores at different times.

If worse comes to worse and you need to drill the core, drill a 1/8" hole in the top part of the core over the "G" in the word Sargent. Put one of the keys into the cylinder and turn. The core will come out. This will allow you to save the plug incase you're working with an oddball keyway. You can use a spare core for parts and continue the job.

*Dan A. McNeil, CRL
Maryland*

TLN



IS there anything really new in the world of safecracking? Yes there is. Mechanical combination locks are giving way to electronic locks that have audit trail capabilities. Keypads are replacing combination dials. Even on older safes you can find something new.

The safe in question this month is an old Schwab Safe. How did I know it was a Schwab Safe? It was embossed on the safe dial. The identification of the safe was not important. I did not drag out my books or flyers to see what I had to do to open the unit. I had to use what I call "Safe Common Sense."

This almost mystical 'sense' developed by having been in the safe cracking business for over 40 years. Granted, sometimes it is wrong, but usually it works quite well on newer safes. I put pressure on the "T" handle and rotated the dial both directions to determine the type of safe lock. (*See photograph 1.*) I counted the wheels and ascertained that there were two wheels and a drive wheel.

A handle like this means either a Yale OB gravity operated lock or a direct drive "Sentry" type of mechanism. Although I could not feel the drive wheel against the direct bolt, I could feel wheels 2 and 3

turning when I applied pressure. This meant the drive wheel was somewhat smaller than the other two wheels.

This could be construed as a manipulation resistant feature, or just a fluke of machining.

If the lock type had been the gravity type OB lock that has a lever from the bottom at about 6:00 o'clock, I would feel little movement of the



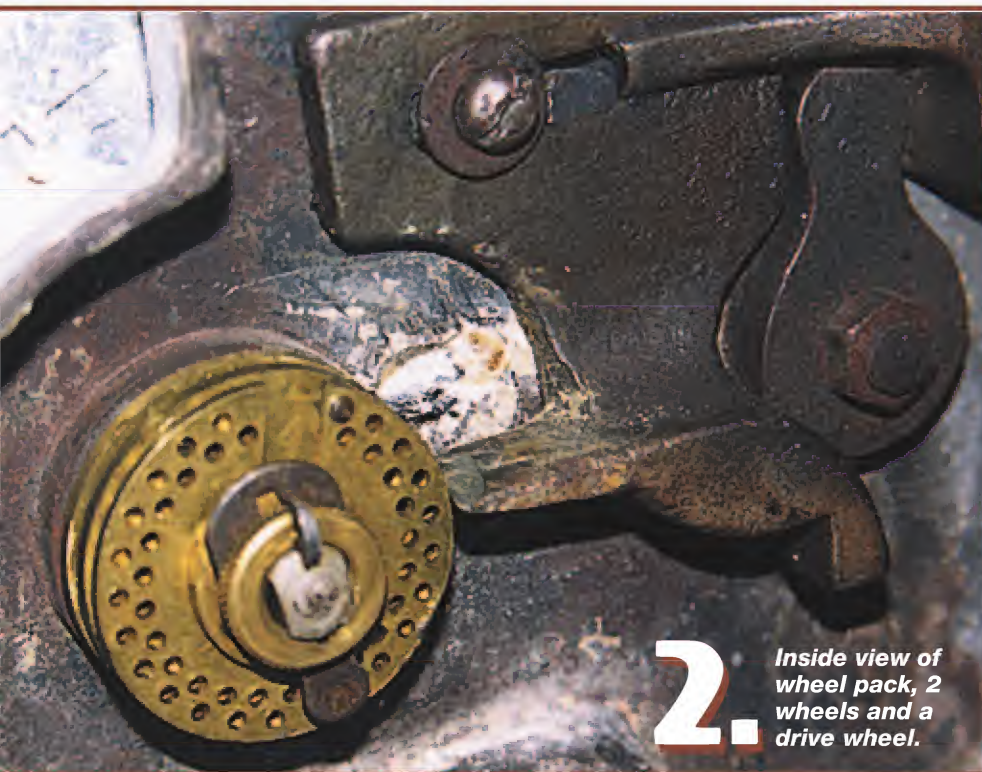
by Dale W. Libby, CMS

wheels through the opening handle.

Before going on with the opening, I will state that I was given this safe. An enterprise went out of business and left the old safe when it moved. The landlord stated that I could have the safe if I could move it. The safe measured about 16"x12"x12". You

1. Schwab dial and "T" handle opening configuration. Note scored dial ring at 80 on the dial.





2. Inside view of wheel pack, 2 wheels and a drive wheel.

know the type, popular about 60 to 80 years ago, way before UL rated safes.

What good is a safe like this today? An interesting end table or boat anchor. They are not fireproof or burglar proof. They are just heavy, with dry rot smelling insides. I did have a use for this door however. It was to become my "Universal Safe Door" for photography purposes. More on this later.

If you look closely at photograph 1, you will see a hole at about 2:00 o'clock that I drilled and used the

Lockmasters Super Mini-Scope to open. Why did I drill here? No reason really. You can drill just about anywhere with a good scope, and the safe will open.

When working on a Swiss cheese type safe opening that someone else has worked on before me, I always ask why they did not use a borescope? They hem and haw, and state that they never needed a borescope to open a safe. I basically tell them in a nice way that besides a pressure rig, a borescope is mandatory for any

safecracking attempt. MANDATORY!

I still remember the 'grain-of-wheat' type lamps that I opened safes with for years. It was a quantum step forward when I got my first borescope. It was an ESI unit with corrective prism that I still use occasionally.

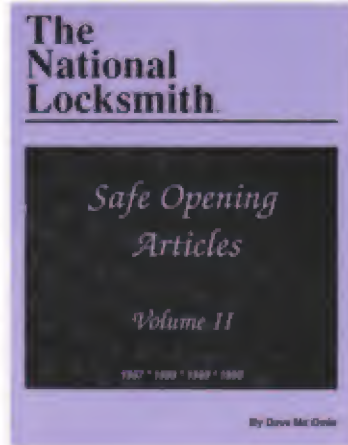
Without a good forward and right angle reading borescope, you are literally in the "Dark Ages" and cannot call yourself a safecracker. At least not a successful "Millennium" safe technician.

I should have looked at the safe door more closely myself. At about 80 on the dial, the dial ring is slightly concave, like someone had drilled just outside the dial ring and caught an edge of the ring with a large drill. The surface of the door was not dimpled or depressed. I angle drilled in at 2:00 o'clock and made a perfect hole in the upper edge of the wheel case to view the two wheels and the driver.

The hole is at 15 on the dial. I made a mark at the dial index at 15, which is where I recorded the combination numbers at. Arithmetical addition and subtraction is out as a way of transferring the gates to the drop-in. Too much chance for error, and direct transferring is easier, and in fact fool proof (as long as you know where to transfer the numbers to).

I made a mark at 75, dialed my known combination to the new mark

Safe Opening Articles



Dave McOmie's original articles from when he first started writing for The National Locksmith are reprinted in this book.

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#SA - 2

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and the door opened. Start to finish, about five minutes.

Photograph 2, shows the two wheels and driver lock, three wheels in all. What is interesting about this lock is the double row of perforations around the drive wheel.

Another interesting view is *photograph 3*. It shows all the wheels lined up just before the "T" handle is thrown to open the lock. What also can be seen is another safecracker's repair. Just above the straight tailpiece and in reference to the inside of the safe at about 2:30 can be seen the repair that a former safecracker made to this unit. The hole is filled with a gum type substance.

The hole outside was threaded, and a 1/2-inch bolt was ground off smooth with the door. I did not look at the edge of the dial ring until I saw this inside repair. Imagine my surprise.

IF you look closely at *photograph 3*, just below the straight tailpiece, you will see a rivet on the third drive wheel. This is the stationary pin on this wheel that cannot be changed. This is what I meant by pre-sequenced combination. There is no way to change this combination to a specific combination. All that can be done on this lock is to change the drive wheel pick-up number. If the original combination is 25, 60, 85, and you move the dial pick up 10 numbers, the new combination will be 35, 70, 95.

Photograph 4, shows the Schwab safe in the open position. In *photograph 5*, I have disassembled the wheel pack. The piece in the center is the slider bar. After the spline key and threaded cap are removed, this bar is free to move in and out to reach any hole in the third wheel. The stationary pins of the other two wheels and the drive can also be seen.

On newer safes of this type, the drive pin would be on the slider bar itself, and it would act as the drive pin. On this safe, the slider bar only determines the number of the last combination gate. This changes proportionally the other two wheel numbers. Very basic and very simple.

I destroyed the rest of the safe, and went to work air chiseling out all the concrete in the door. (My type of fun.) When that was done, I had a universal safe door for photography purposes. I drilled screw holes for Standard dials, and inserted a plate drilled for modern Group I and II combination locks.

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3. Note previous repair at 2:30 o'clock. Also fixed pin on third wheel.



4. Door opened with tailpiece in wheel pack.

Now I can photograph any lock on a door, front to back. I can also change handles to match newer handles. Measurements are not exact, but the idea of relative positioning is perfect. You have seen this door before in many different guises, and will see more of it in the future.

So, open, buy a borescope, and prosper! **TNL**



5. Exploded view of wheel pack, with slider mechanism in middle.

Wedgeco Key Extractor Kit



by
Bob Sieveking

Good tools always make the job easier. Even some of the simplest things, like removing broken keys, can be pretty challenging some times. Tight keyways, and keys broken deep in the bottom of a lock can make it necessary to remove and disassemble a cylinder to extract the broken key. If we can avoid disassembling a cylinder, the time saved is easily converted to increased profit in the job

1. The Wedgeco Key Extractor Kit.



2. Close-up of one of the spiral key extractors.

No one tool or method will work every time, but there are a few tools that work better than others. Since the advent of the spiral key extractor, we have had to disassemble fewer cylinders than we used to. The Wedgeco Key Extractor Kit you see in *photograph 1*, has a very versatile array of key extractor tools. The kit includes a fine point locking forceps, three spiral key extractors with molded plastic handles, and an extremely handy pair of fine point Wedgeco pliers. The pliers have a very small point, and are bent to allow you to look down the keyway as you reach in to grasp the key.

Photograph 2, shows an extreme close-up of one of the spiral key extractors. You can see the “cut spiral teeth” of the extractor. The extractors are ground to a point to enter the keyway beside the key or in one of the ward grooves. The extractor is actually “screwed” into the key ward, to grip the key.

Let's pull a broken key, to see the tools in action. In *photograph 3*, we are using an otoscope to look into the keyway. Notice that we are using a spring door tool to hold the dust shutter or spring door back. This will make viewing the keyway and working with the broken piece much easier. There is no need to fight the spring door as we pull the key.

Before we can extract the key, we need to see how it is lodged in the keyway. Many times a customer will come into the shop complaining that there is a key broken off in their lock, and the only problem is the lack of lubrication. If you look in the keyway, you won't find anything. A little lubrication and exercising the wafers in the lock will restore satisfactory operation. In our case, there was indeed a broken key in the keyway.

Install a little spray oil in the cylinder to loosen up the wafers, and insure that the plug is in the key pull position. If the wafers can not be moved, owing to the fact that the plug is turned slightly, You will not be able to move the broken key up the keyway.

The decision was made to use a spiral key extractor to remove the broken key. The pointed tip of the spiral extractor was guided into one of



3. Using an otoscope to look into the keyway.



6. The fine point Wedgeco pliers reached right through the dust shutter cap.



4. The extractor is turned or screwed in, beside the broken key.



7. How we were able to grip the broken key.



5. The broken key is guided right out the front of the lock.

the minor key ward grooves the extractor is turned or screwed in, beside the broken key. (See photograph 4.) When you feel that you have a grip on the key, pull the extractor to move the broken key up the keyway. Sometimes you may need to screw the extractor farther into the keyway as the key is moved to the front of the lock to maintain your grip.

Photograph 5, is the picture of success. The broken key is guided right out the front of the lock.

I wondered if the Wedgeco pliers could have removed the same piece, so I pushed the broken key back into the lock, so that the end was even

with the first wafer. The fine point Wedgeco pliers reached right through the dust shutter cap, and gripped the key across the warding grooves, as you see in photograph 6, allowing us to again remove the broken key. *Photograph 7, better illustrates how we were able to grip the broken key.*

Sometimes, having the right tool can make the difference between a job that went well and one that took too long.

I enjoyed using the Wedgeco Key Extractor Kit.

For more information on the Wedgeco extractor tools circle 294 on Rapid Reply or contact:

*Wedgeco Tool Supply
 717-122 Ave., NE No. 4
 P.O. Box 50250
 Bellevue, WA 98015
 Phone: (800) 452-2304 **TNL***

THRU THE KEYHOLE

A Peek at Movers & Shakers in the Industry

ATTENTION MANUFACTURERS AND DISTRIBUTORS:

Would you like your company and products to be profiled in *Thru The Keyhole*? Please call Editor, Greg Mango, at (630) 837-2044.

Custom Form Designs by NEBS

Today, small businesses face a growing number of marketplace challenges. There is no doubt about it, running a small business is tough. It can be even tougher when day-to-day operations do not run smoothly, and time, energy, and money are lost.

Using inappropriate or inadequate business forms, for example, is one of the most wasteful and inefficient things a small business can do. Do you often find yourself doing duplicate paperwork? Are you constantly modifying your forms by crossing out or adding to what is pre-printed? Do you ever have to call your customers for key information that you or your employees forgot to ask?

Using the wrong business forms can cost you time and money. It can even cost you customers if the inefficiencies these forms create compromise your ability to serve customers well. What is the alternative? Custom printed business forms.

Unlike "off-the-shelf" products, custom forms are unique, one-of-a-kind products that meet the specific needs of your business, since they are designed by the ultimate expert on that subject, "you!" Custom printed forms can enhance the flow of your business operations. They can save you valuable time and energy. And, perhaps most importantly, they can help you and your staff safeguard against making costly omissions and mistakes.

How should your business forms be designed? Only you can answer that question, but here's an important guideline to use; design your forms to reflect your work flow. If your current forms are not working for you, take some very specific notes on how you would like to see them change. Would it work better for you, for example, to have separate totals for parts, labor,

and freight on your invoices? Do you need more room for item descriptions than most standard forms provide? Here are a few additional design ideas to consider:

Color

Use color-coding to highlight key areas. This will increase the speed at which the form is filled out while improving overall readability.

Perforations

Use perforations to create a "tear-out" portion of the form, which can be used to mark merchandise in order to eliminate mistakes.

Print Coupons

When applicable, print coupons or advertise a complete list of your products or services on the back of the customer copy of your form.

List Guidelines

Dedicate a portion of the form to document and enforce good operating procedures by providing a list of guidelines or instructions.

Add Fields

Add fields to capture all relevant information about your customers. This information can later be utilized not only to give you a "leg up" on the competition, but also to provide you with vital information for proactive initiatives. For example, prospecting for new customers or following up with customers when your records show it's time to reorder.

Include Terms, Conditions & Policies

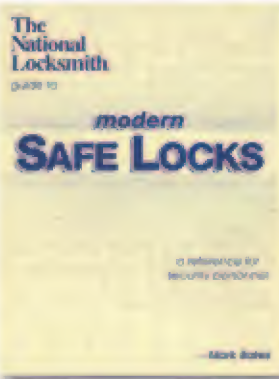
Because no two businesses operate in exactly the same way, make sure to include your terms, conditions, policies and any other important information somewhere on your form. Having this information up front will mean fewer misunderstandings in the future.

In addition to increasing your efficiency, custom printed forms offer the added bonus of making you and your business look more polished and professional. The bottom line? The success-oriented forms can help you streamline your operations, increase your productivity and improve your image. These are three fantastic benefits no success-oriented small business owner can afford to miss.

For more information on custom forms contact: New England Business Service, Inc. (NEBS), 500 Main Street, Groton, MA 01471, Phone: (978) 448-6111, Fax: (978) 448-2369. Circle #295 on Rapid Reply Card.

TRIL

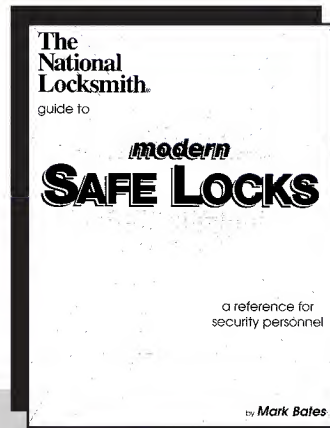
Modern Safe Locks



CLICK HERE TO LEARN MORE



#MSL - 1



*This material was excerpted from the Mark Bates book titled **Modern Safe Locks**. The book covers combination operating and changing procedures for virtually every combination lock both mechanical and electronic, that you will encounter on a daily basis. **Modern Safe Locks** is available for purchase through **The National Locksmith**.*

MODERN SAFE LOCKS TECH BULLETIN

Fichet Bauche

MODEL:	C2C (Current Production)
DESCRIPTION:	"Click" type combination safe lock with compound dial. The position dial is numbered 1 through 4.
RATINGS:	None
FACTORY COMBINATION:	Dial positions 1, 2, 3 and 4 are set to "zero" clicks.
OPENING PROCEDURES:	<ol style="list-style-type: none">Align position mark "1" on the position dial with the opening index.Turn the counting knob left until it stops.Enter the appropriate number of clicks for position "1" by turning the counting knob to the right.Repeat steps "a" through "c" for positions 2, 3, and 4.
TO LOCK:	<ol style="list-style-type: none">Align position mark "1" at the opening index and turn the counting knob left OR right a random number of clicks.Repeat with positions 2, 3, and 4.
LIMITATIONS:	Each of the four positions may have from 0 to 19 clicks.
CHANGING PROCEDURE:	<p>WITH THE SAFE DOOR OPEN...</p> <ol style="list-style-type: none">Open lock (steps a through d under "Opening Procedures").Insert the Fichet key that operates the separate key lock on the safe into the changing tube in the back of the C2C. Turn the key 1/2 turn left to stop. Withdraw the key. (See notes)Align position mark "1" at the opening index and turn the counting knob left until it stops. Now enter the desired number of clicks for position 1Repeat step "c" for positions 2, 3, and 4.Re-insert the key in the back of the lock and turn it right 1/2 turn to stop.Withdraw the key and check the new combination.
TOOLS NEEDED:	The key from the key lock is used to change the combination (see notes).
NOTES:	This interesting lock is found exclusively on Fichet safes. The C2C often operates in conjunction with a Fichet key lock, so it was designed to be changed using that style key. The key serves as a turning tool only, and a slotted screwdriver substitutes nicely.

Fichet Bauche



C2C (Current Production)



Vaults & Tear Gas

Part 1



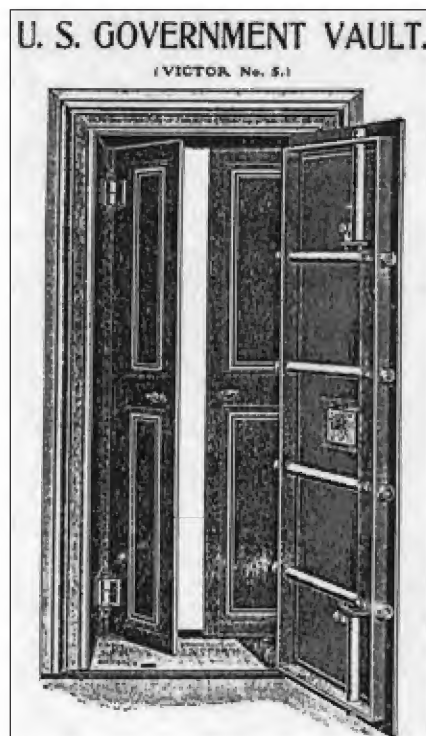
by
Carl Cloud

Old tear gas can be deadly! Back in 1941, just after the outbreak of the Second World War, tear gas canisters were installed into vault doors of U.S. post offices and in some government buildings. About fifteen years ago it was discovered that the tear gas had changed chemically. This once humane eye irritant was now as deadly as Cyanide gas - the stuff to execute a guy in the gas chamber! Needless to say, these old tear gas canisters were removed and carefully destroyed... as far as we know.

One of my first contacts with tear gas began with a telephone call from the local postal inspector. He had an unusual request - direct the disarming of tear gas from a vault door! He would like to make an appointment for seven o'clock the following Thursday evening. His reason for the after hours schedule: a post office building and the adjoining streets would have to be cordoned off from the public. To me, this sounded like another government "Let's create a costly and a completely overkill project." I wasn't aware that a post office even had tear gas in their vault doors. This project sounded like it would be very informative and interesting!

My arrival to the scene was greeted by police directing traffic and street barricades. In the rear of the

building a vehicle from the Hazard Materials Department was parked, along with the bomb squad complete with their "haul off the bad stuff" trailer! Now, I was giving this a little more serious approach.



1. Old brochure of a Victor vault door arrangement.

The Postal Inspector met me and led me to the vault. Two other men followed along. They were outfitted in full protective yellow jump suits, with only their faces showing through the glass window of the enclosed hoods. Suddenly, I felt a little undressed! The vault door was a simple plate construction made by the York Safe & Lock Co., York, PA 1936. (See photograph 1.)

Beyond the door was a short vestibule where two additional double doors opened into the area of the vault room. (See photograph 2.) On the left wall of this short hallway was mounted a tall rectangular steel box. A steel rod entered into the top of the box. (See photograph 3.) The rod appeared to be controlled by a pivot arm protruding out from the side wall.

There was a sign printed on the face of the box that read:

IMPORTANT! WARNING!

DO NOT PERMIT unauthorized persons to tamper with or pretend to inspect the installation of locks or gas.

Smith W. Purdom
Forth Adjutant
Inspector General

Wow! That sounded pretty official! Especially the part about the GAS!



2. Post office vault door by York Safe & Lock.



3. The steel box with the control rod.

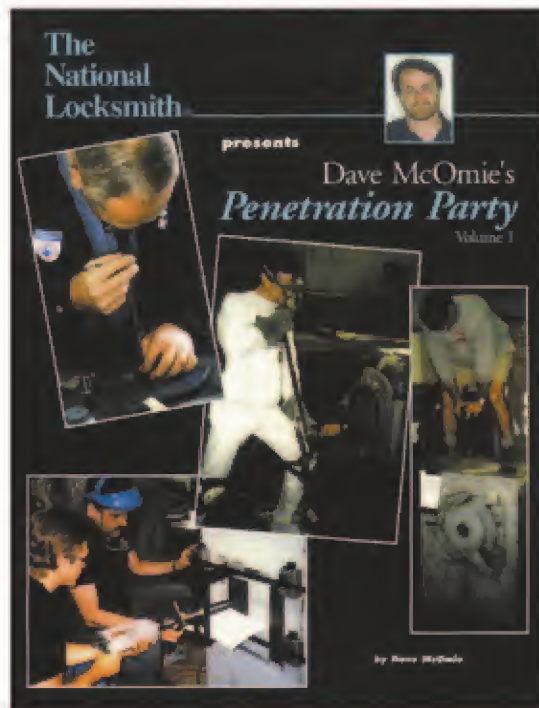
This didn't bother the guys in the yellow jump suits. They were anxious to start removing the mounting screws from the cover of the box. My host looked at me as though I might have some suggestion to the first step. Ah ha! Little did he know!

The steel rod running from the top of the box and up to a pivot arm that disappeared into the wall led me to believe that the door had to activate it. A 1/2" diameter flush mounted pin in the doorframe assured my suspicions. Therefore, if the vault door is opened, there was no way to activate the bar into the box.

To confirm all of this, I suggested that the back cover of the vault door be removed. The two yellow suit guys started the task of removing the multiple cover screws. As it was pulled away and set aside, it offered the strangest vault door view I had ever seen.

Stands of wire looped from top to the bottom of the door. Some crisscrossed from side to side. Extra wires crossed behind the lock case. (See *photograph 4.*) All the looping and crossing wires led to a relocker device called an Anakin relock. This heavily spring loaded pin fired out of the door and into

Penetration Party



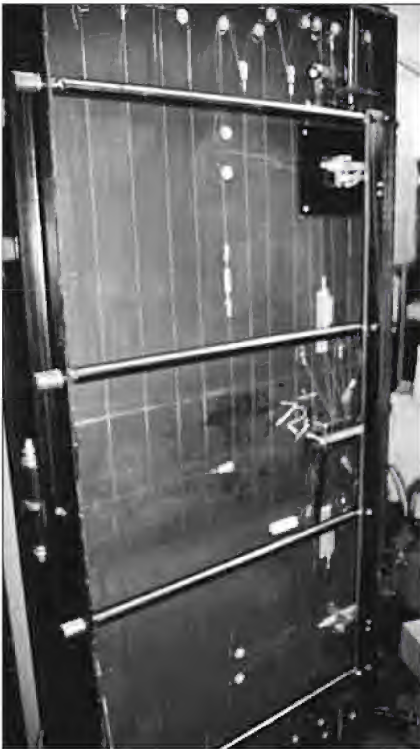
- Uncensored! • The Safes! • The Tools!
- The Action! • The Perfect Openings!
- The Bloopers and Blunders!
- The Slick Tricks!

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#PP - 1

November 1999 • 129



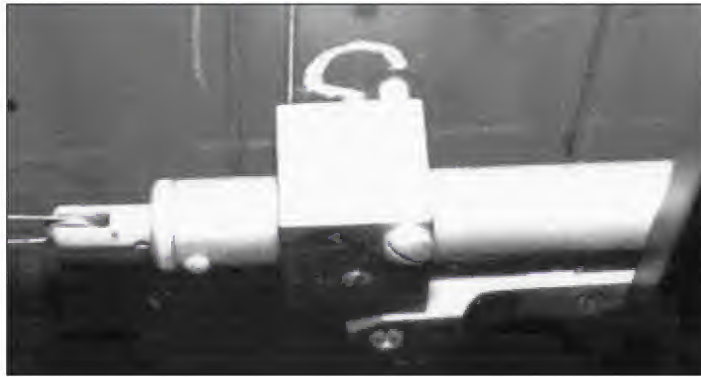
4. It is difficult to see, but this door is a web of wire.

the doorframe, much as a regular locking bolt. (See photograph 5.) The breaking of any wire activated the Anakin relock. It shot out of the door and plunged into the flush mounted pin in the frame. This upward movement of the pin causes the pivot arm to move and forced the steel bar downward into the box containing the tear gas.

Knowing that nothing could happen to activate the tear gas as long as the vault door was open, the opening of the metal box was started. The two yellow suit guys removed the securing screws to the box cover. Cautiously, they tipped it outward and pulled it away from the box body. The box cradled three glass tubes in a vertical position. Each tube seated into a metal socket. Each socket was fitted with a firing charge from a shotgun shell. As the steel rod moved downward, it released spring loaded firing pins into the charges, exploding the glass vials of tear gas. (See photograph 6.)

While the disassembly of wires, relocker and all connections to the metal box were going on, I was sent to the basement to check out a second vault door. The vault was also a York, but the door had previously been stripped of its wires and relocker.

Most of the 'stand-off' pegs for the looping wires had been removed from



5. An Anakin relocker fires into the doorframe like a locking bolt.



6. Looking down into the box shows the cradles for the three tear gas vials.



7. The second vault door had been stripped of its wires, except for the area around the lock.

the interior of the door. The gray rectangular plate on the right top, near the York Safe sign, was the mounting for the Anakin relocker. (See photograph 7.)

The only area still secured by the wires were crisscrossing behind the lock case. These controlled two relockers that fired into two separate



8. Wires crossing behind the lock.

locking bars, one above and one below the lock. (See photograph 8.)

I was never told how they determined the tear gas had changed into a deadly gas. Maybe I don't want to know! Well! Tear gas in a public area, what will they think of next! How about loaded shotguns mounted under those post office counters pointed out toward the lobby! Now that's another spine tingling story! **TNL**



During my years in security sales, I found that insurance agents were a very productive lead source. I also discovered that this, like most sales programs, were frequently done haphazardly and ignored by sales people. Unless you

make it mandatory and have a reporting system to track it, most sales programs get discarded by sales people the minute any resistance sets in.

About every eight weeks I'd have "Insurance Contact Week." Every sales person was required to visit two

insurance agents each day that week and would take a small gift, like a flashlight with batteries with them. On a return visit they could take in some replacement batteries.

I focused on casualty agents, not life insurance agents. For the larger insurance organizations that might invite me back I would put together a 20-minute program on: "Insurance Agent's Guide to Residential and Commercial Security."

I also got information on what professional casualty insurance agent associations were around and how to reach them to address their monthly meeting.

It's never good business to offer a big bribe for sales. Many insurance agents feel that recommending you is part of the service they offer policyholders and are offended with money offers. (Some are not however; you have to feel out their individual attitudes very carefully).

I would always mail a "Thank you" card for any referral. For leads that become a sale I might send a nice gift basket to the agents home for their family to enjoy.

Another reward was to ask them their spouse's favorite restaurant. I'd take a credit card to the restaurant, see the owner or manager and either buy a gift certificate or get the card imprinted and instruct the restaurant to charge the agent's dinner to us. While we were there we sold a lot of the restaurants on our security services. I also sold a number of security systems to insurance agents for their homes and businesses with this program.

A word of warning: Insurance agents as a rule are very service oriented people. They are also very protective of their clients. These people will not be very forgiving if you make promises you don't keep or treat one of their insured badly.

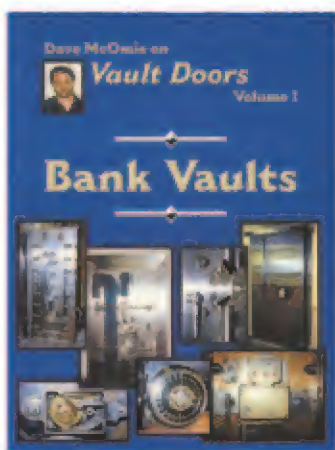
On the positive side, if you do your job properly and keep your promises you'll develop some fantastic lead referral sources for life.

Good luck and good selling!

For additional free selling tips visit his web site: www.trainingexpert.com

TRL

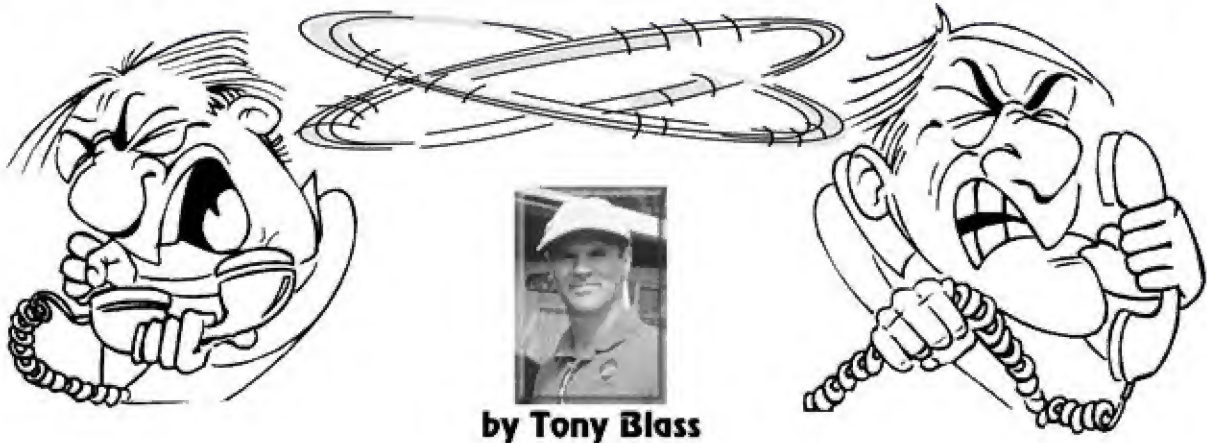
Dave McOmie on Vault Doors Vol. 1 & 2



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#VD - 1, VD - 2

Conversations That Stick To Your Brain



by Tony Blass

As part of the job of locksmithing, we must engage in conversation with anyone who can walk, stagger, or be dragged into our shops. We must also talk to anyone who can dial or sit on a phone and accidentally call us. Now, as we all know, having a conversation with someone is a lot like trying to give a traffic ticket to Zsa Zsa Gabor. They can both hurt you if not handled correctly.

During my 24 years of mobile locksmithing, I calculate that, at a rate of about six people a day, I have had approximately 34,500 conversations with customers. Out of that number, some of them were bound to end in heartbreak, tragedy, and yes, even death. Well, O.K., maybe not death, but very close on a couple of occasions. The conversations you remember, however, are the unusual ones that sort of stick to your brain like egg yolk sticks to your silverware after a run through the dishwasher.

Now I am not judging any of my fine customers here, because over the course of our lives everyone gets to play the fool. It's just that some of us don't seem to want to wait for our turn. I think Dan Quail spoke for a lot of the general public when he said, "I may not be any Alvin Einstein, but at least I know there is supposed to be an 'e' at the end of potato."

Let's start with wrong numbers dialed, of which I receive many since I have three phone numbers that all filter into my cellular phone. A conversation I had recently went like this:

Caller: "Is Adrian there?"

Me: "No, there is no Adrian here."

Caller: "Do you know where she is?"

Me: "I'm still working on who she is, but I will take a guess that she is at some other telephone number, awaiting your call."

Caller: "Do you have that number?"

Me: "No, but I'm sure it's in the phone book."

Caller: "When will she be back?"

Me: "Probably not until about two days after the Chicago Cubs win the World Series."

Caller: "Is this her father?"

Me: "Except for one night of which I have almost no memory, I can pretty much assure you I am not her father."

Caller: "Can you tell her to meet me by the reservoir at 9:00."

Me: "The reservoir. Perfect! And why don't you surprise her with that Chicken Picata dish that she loves so much? Bye-bye now."

After I hung up, I will put my hand in front of my mouth to make sure I could feel vibrations when I spoke, just to make sure I was actually transmitting.

Along those same lines, a scant two days ago I got a call from a telemarketer. This person was obviously paying close attention in telemarketing class when they told her, "Don't give up until you actually hear their heads explode." The conversation went like this:

Caller: "Is the person who handles your long distance available?"

Me: "That would be me, but I am very busy and do not want to talk to a salesperson right now, or ever, for that matter. Could you please take me off your calling list?"

Caller: "But I can save you 40% on your long-distance calls."

Me: "Have you ever had your appendix removed the hard way, without an incision?"

Caller: "What are you paying per minute on your long-distance now?"

Me: "You know, you sound like the type of person who would be just delicious cooked up in boiling olive oil and served with a garnish of basil and maybe little paprika."

Caller: "Our records show that you are with AT&T now."

Me: "I'm going to take a wild guess and say that your husband left you soon after your marriage. Am I right?"

Caller: "In certain cases we can save you 60% on interstate calls."

Me: "Wait a minute. Did you say 60%? That sounds great. And I have some friends who would be interested also. Can you hold on for a second?"

I then put her on hold and went out and washed my van.

I must be losing my touch, I can usually get them to hang up on me within the first ten seconds.

Back to the wrong number category. I receive a lot of calls intended for a local hangout called The Silver Peso Saloon, whose number is one digit different than mine. So consequently I am involved in conversations such as the following:

Me: "Abco, can I help you?"

Caller: "Yeah, Uh, I think I forget me wife over there last night. Can you check under the tables for me please?"

Another problem I have is that the phone directory assistance in my area has a habit of giving people my number when they ask for a company called Avco Finance, so that I find myself in phone interactions such as this:

Me: "Abco, can I help you?"

Caller: "Yes, I won't be able to make my loan payment this month. I bet all my money on a horse that suffered a kidney stone attack in the middle of the race. By the way, is there anyone down there who might be interested in a used car stereo? I have twelve of them."

Sometimes I will kid them and say:

"You can't make your loan payment this month? No problem. I'll just send Vincenzo, our debt counselor, over there to discuss with you your various payment options. You aren't sensitive around your shin area, are you?"

Then there are recurring conversations. I would be curious to know how many locksmiths have engaged in this following conversation as many times as I have. You present the customer with the bill, they sit down, take a long look at it, and then begin to write the check. Their first question is:

Customer: "Who do I make the check out to?"

Me: "Abco Lock Co., as it appears on the top of the invoice there."

Customer: "Oh yes, silly me. Do you know the date, by any chance?"

Me: "Why yes I would, let's take a look at the upper right hand corner of the invoice."

Customer: "Oh right, I'm sorry. So anyway, what is the amount?"

Me: "That would be the figure in the lower right hand corner of the invoice next to the words Total Amount!"

I don't mean to be snide (it's just the way I was born) but, I always wonder how these people passed their driving test when they had to deal with such difficult questions as, "What four letter word will you see printed on every stop sign?"

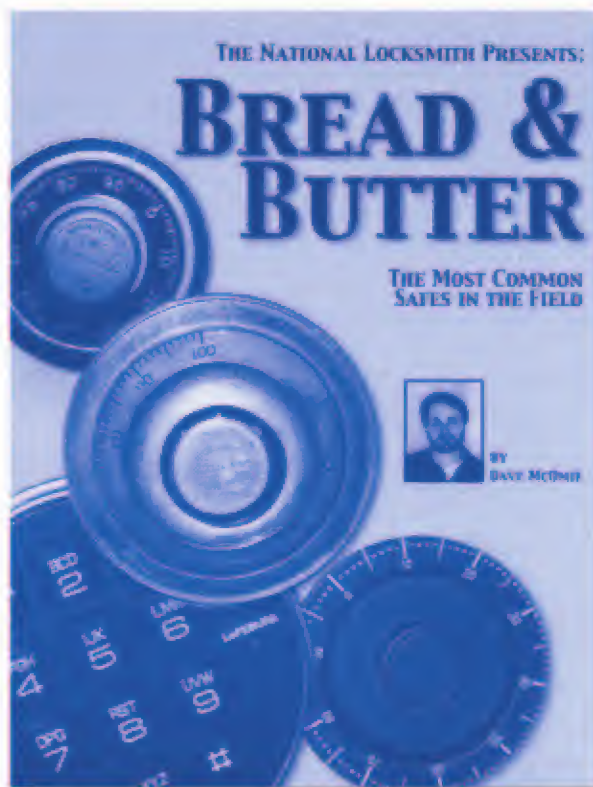
Some conversations come to a screeching halt due to the language barrier. I once got a call from a customer with a very thick foreign accent. She said: "Con you please to make a key for my Boenix?"

Me: "Well, we try not to get involved in personal matters, so I hesitate to ask, what is your Boenix?. Is that some kind of padlock maybe?"

Customer: "No."

Me: "Armoire?"

Bread & Butter



Now here is one amazing value!

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#BB - 01

Customer: "No."

Me: "Is it a lion cage? Gum ball machine? Bowling ball bag? Weasel trap? F-18 fighter jet? Doll house? Ham hock storage warehouse. Pentagon briefing room?"

Customer: "No, no, no. It's a car."

Me: "Ah, a car. Now we are getting somewhere. Is this car foreign or domestic?"

Customer: "It's just a car."

Me: "Would it be a Bonneville, or maybe a Phoenix?"

Customer: "No, it's a Boenix."

Me: "Could you possibly spell that for me?"

Customer: "Well uh... no."

Me: "Hmmm," I pondered, "Let's try it this way. If I borrowed your Boenix and drove it back to the country that it was made in, which direction would I be heading in?"

Customer: "You can't borrow it; I don't have the key."

This went on for about five more minutes, and finally I had to say, "Sorry, but I think you are going to have to call your local Boenix dealer for this job."

To this day, whenever I am on the road, I keep my eyes peeled for a Boenix, just in case. Then there is the perennial task of explaining to the customers exactly what a lock change entails, as in this conversation I had a while back:

Customer: "Now when you change my locks, what color will the new locks be?"

Me: "Well, they will be the same color as the old locks. In fact they will be the old locks, because we will only be changing the pins inside the lock and then give you a new set of keys."

Customer: "Really? You can do that?"

Me: "Yes, as far as I know it is legal in all fifty states and parts of Puerto Rico and Guam."

Customer: "Can I keep the pins, in case I want to change them back to the old key?"

Me: "Sure, you should be able to handle that after only a brief four-month locksmithing program." (O.K., so I am a wise guy.)

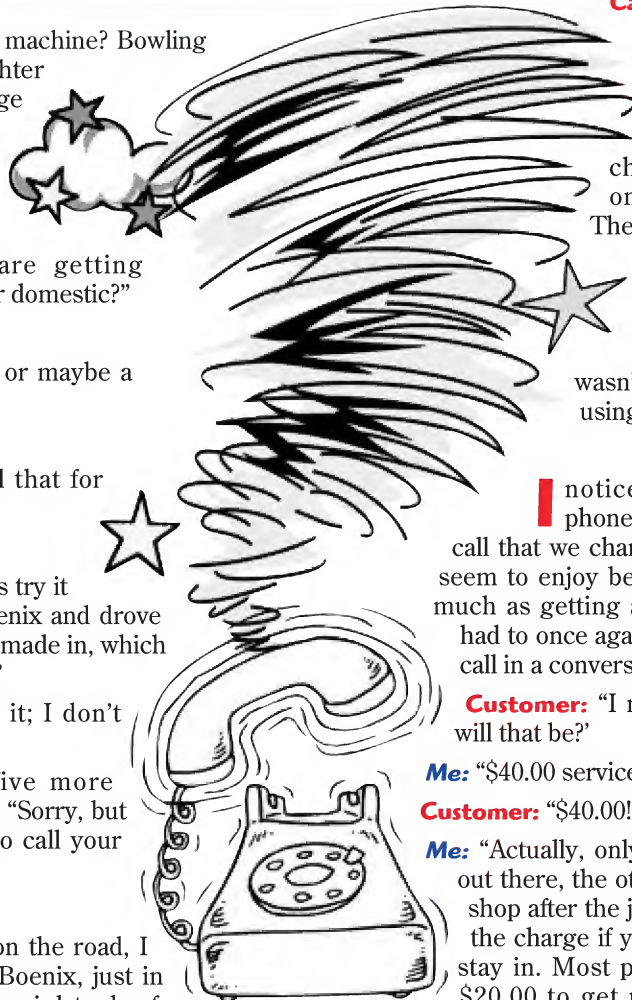
Customer: "So anyway, what color did you say the new locks would be?"

Then of course you get the calls that sort of defy description such as the following:

Me: "Abco"

Caller: "Hi Tony. This is Jim. Can you come over and change my locks again?"

Me: "Sure Jim, what's your address?"



Caller: "You don't remember me?"

Me: "Why sure I do... uh... uh... No I don't."

Caller: "You worked for me about five years ago. You changed my locks. Remember, the ones with all the tumblers in them. Then you gave me new keys so the old ones wouldn't work. Remember now?"

Me: "Oh was that you? Oh yeah! Jim, right? That was your name wasn't it? Jim? So, Jim, are you still uh... using keys and everything?"

I notice over the years that a lot of the phone conversations center on the service call that we charge for our travel time. Some people seem to enjoy being charged a service call about as much as getting a Tetanus booster shot. Recently, I had to once again defend the charging of the service call in a conversation that went like this:

Customer: "I need my locks re-keyed, how much will that be?"

Me: "\$40.00 service call and \$10.00 per lock."

Customer: "\$40.00! just for coming out here?"

Me: "Actually, only \$20.00 of that amount is for going out there, the other \$20.00 is for coming back to the shop after the job. We can eliminate that last part of the charge if you have an extra bedroom for me to stay in. Most people are happy to spend that last \$20.00 to get rid of me. By the way, what's for dinner? I'm getting a little hungry."

This usually confuses them enough to get them off the subject of the service call or having lock work done at all, for that matter.

Finally, there are the moments you share with your customers during which you try to solve the mysteries of life as in the following conversation I had last week:

Customer: "Can you make a key for my car?"

Me: "Sure, how did you lose them?"

Customer: "Oh, I didn't lose them. I just don't have them and I don't know where they are."

Me: "Hmmm. You know, I have that same problem, but with money. I don't spend it, but I still don't have any, and I don't know where it is, although I am beginning to suspect my wife may have something to do with this."



If you would like to convey a personal experience you have had on the job (be it humorous or not) that would be enjoyed by others, e-mail Tony Blass at: tonyblass@earthlink.net.

TNL

BUSINESS BRIEFS

Monarch Hardware Appointments

Monarch Hardware has named Michael Epperson as General Manager and Joseph Weingardt as Marketing Manager. In this leadership position, Epperson is responsible for all oper-



ational aspects of the company, including sales and marketing, finance, purchasing, and manufacturing.

Weingardt comes to

Monarch from Johnson Controls, Inc., of Louisville, Ky., where he was an account executive in charge of sales management for the



Commonwealth of Kentucky.

Abloy Merges North American Operations

Abloy Construction Locking in Brooklyn, N.Y. has merged all operations into Abloy Door Security, North America, a division of Abloy Canada Inc. Steve Timmons, president of Abloy Door Security, said the new Montreal-based division will handle sales, marketing, customer service, master keying and complete assembly operations for all door security products in North America. Information on courses, distribution and sales representatives is available from Abloy North America at 800-465-5761. The Montreal location will also house North America's only Abloy Disklock Pro computer controlled production key machine. The machine can cut a key

every 10 seconds, translating into quicker service on virtually any size order for locks, keys and Abloy master systems.

DynaLock Corp Appointments

DynaLock has announced that Koleen Mazzochi has joined the company as Customer Service Manager. John Sanchirico, Jr. has also been assigned as Manager of the newly formed Sales Engineering Department.

The appointments will coincide with the opening of DynaLock's 6,000 square foot addition.

Adrian Steel Company

Adrian Steel Company is now on the Internet. Access Adrian's website at www.adriansteel.com, and you can view the online catalogs, learn about the company background, and keep up to date on Adrian's new products.

Access all three online catalogs from your computer for immediate product information on van interiors, ladder racks, and tool boxes. Download all the pages from the Van Equipment, Pickup Equipment, and Walk-In Van Equipment catalogs exactly as you would see them in the printed versions.

Security Lock Distributors Awarded Top Distributor Honors

Detex Corporation has presented their first annual "Outstanding Sales Achievement Award" to Security Lock Distributors, honoring them for their efforts in support of Detex products.

For more information call: 800-847-5625; Fax 800-878-6400; E-mail: info@seclock.com; Web: <http://www.seclock.com>.

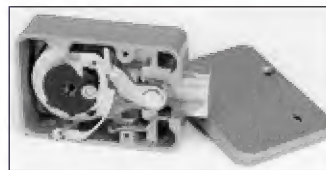
A.H.S. Stocking S-700 Strikes

Hanchett Entry Systems' new 5700 series electric strike is now in stock at Access Hardware Supply. The 5700 electric strikes are designed with a 1/8" horizontally adjustable keeper. This feature allows the installer to easily adjust the electric strike opening to accommodate the latchbolt after the electric strike is installed. The H.E.S. 5700 series shares the seven interchangeable faceplates with the H.E.S. 5000 series electric strikes. Also the 5000, low profile, series strikes are now field changeable fail safe/fail secure.

For more information please contact A.H.S. at 800-348-2263 or fax your request to 800-435-8233. Circle 288 on Rapid Reply.

Safe Lock 685

The Unican Lock Division of Ilco Unican announced the release of the new Safe Lock 685. This three-wheel mechanical safe lock is UL listed Group 2M and is designed for applications such as installation on safes of all types up to a TL 30 rating. The model 685 replaces the model 683 in the Group 2M category and is available for immediate shipment.



For more information you may phone 1-800-849-8324 or fax 1-800-346-9640. Circle 289 on Rapid Reply.

Hirsch Appoints Technical Services Manager

Bob Kraatz will manage Hirsch's technical support, testing, document control

and product evaluation, as well as implement the infrastructure to accommodate the firm's rapid expansion. In support of Hirsch's growth, Kraatz will be adding personnel and technology automation such as call tracking to enhance the firm's responsiveness and reduce the wait time for callers to its help desk.

Aiphone Company, LTD. Receives ISO-14001-Certification

Aiphone recently received ISO 14001 certification for Environmental Excellence. ISO 14001 is a series of voluntary standards and guidelines formulated by the International Organization for Standardization (ISO) to harmonize environmental disciplines for industries all over the world. Companies who meet these standards take a proactive approach to the development, assessment, and performance evaluation of their products.

For more information contact: Aiphone Corporation, 1700-130th Avenue N E, Bellevue, WA 98005, Phone: (425) 455-0510, Fax: (425) 455-0071.

Hartman Heads Bank Product Division for Sargent & Greenleaf

Thomas J. Leppert, senior vice president marketing and sales for Sargent & Greenleaf, Inc., announced the promotion of Tom Hartmann, an 18-year veteran in the security industry, as the new vice president of the company's Bank Products Division. Hartmann returned to the United States in March after spending four years at S&G's European operations in Ecublens, Switzerland, as the director of sales and marketing for S&G, SA. 

KEY CODES

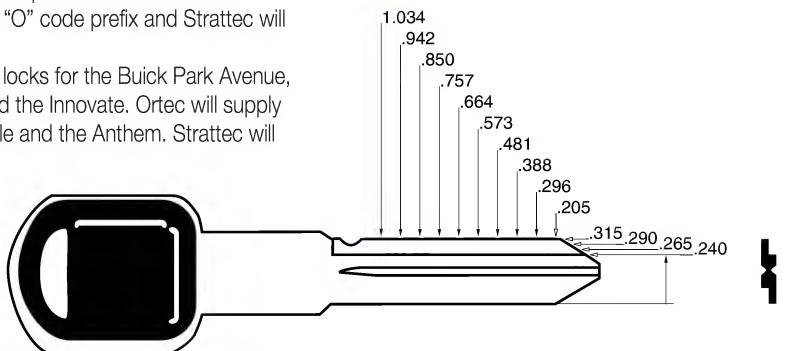
New GM Ortec Series O5000-O6999

General Motors is introducing a new 10-cut code series for the year 2000 vehicles. The code series is being split between three lock manufacturers: Huf, Ortec and Strattec. The letter prefix designation of the code will determine which manufacturer produced the lock. For instance, Huf codes will have an "H" prefix. Ortec will have an "O" code prefix and Strattec will have an "S" code prefix.

From the information we have gathered, Huf will be supplying locks for the Buick Park Avenue, Catera, Cadillac Seville, Cadillac Eldorado, Cadillac DeVille and the Innovate. Ortec will supply locks for the Buick LeSabre, Oldsmobile 88, Pontiac Bonneville and the Anthem. Strattec will supply codes for all other GM models.

All previous 10-cut key blank and spacing and depth information remains the same. The only thing new is the code series.

As with the original 10-cut code series, this is a very large series addition. The portion of the code series we are presenting here is the Strattec series identified by the letter "O" prefix.



Manufacturer: Strattec for General Motors

Code Series: S000A - S711K

Key Blanks:

BWD: M95DB or M95DBL

Curtis: B-82 or B-86

Ilco: P1102

Ilco EZ: B82

Jet: B82 or B82NP

Silca: GM39

Strattec: 597500 (88 & 75 Grove)

Number of Cuts: 10

M.A.C.S.: 2

Key Gauged: Tip

Center of First Cut: 1.034

Cut to Cut Spacings: .092

Cut Depth Increments: .025

HPC 1200CMB

Code Card: CF215

Jaw: A

Cutter: CW-1011

Gauge From: Tip

HPC 1200PCH (Punch):

PCH Card: PF215

Punch: PCH-1011

Jaw: A

Silca UnoCode

Card Number: 567

HPC CodeMax

DSD #: 259

Jaw: A

Cutter: CW-1011

Curtis No. 15 Code Cutter:

Cam-Set: GM-6

Carriage: GM-6A

Framon #2:

Cuts Start at: .216

Spacing: .092

Block #: 3

Depth Increments: .025

Key Clamping Info: Using spacing clip, align tip of key with left side of vise. Lay clip flat on left side of vise and slide key in from the right.

A-1 Pack-A-Punch

Quick Change Kit: PAK-G1

Punch: PAK-90T

Die: Standard

ITL 9000 & 950

Manufacturer ID: 519

Spacings:

1 - 1.034

2 - .942

3 - .850

4 - .757

5 - .664

6 - .573

7 - .481

8 - .388

9 - .296

10 - .205

Depths:

1 = .315

2 = .290

3 = .265

4 = .240

5000 3224213132
5001 1331232434
5002 1321124233
5003 2311231342
5004 1134323211
5005 3232421332
5006 1221234433
5007 2213224342
5008 2232231334
5009 3231332432
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5012 3342242313
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New GM Ortec Series O5000-O6999

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New GM Ortec Series O5000-O6999

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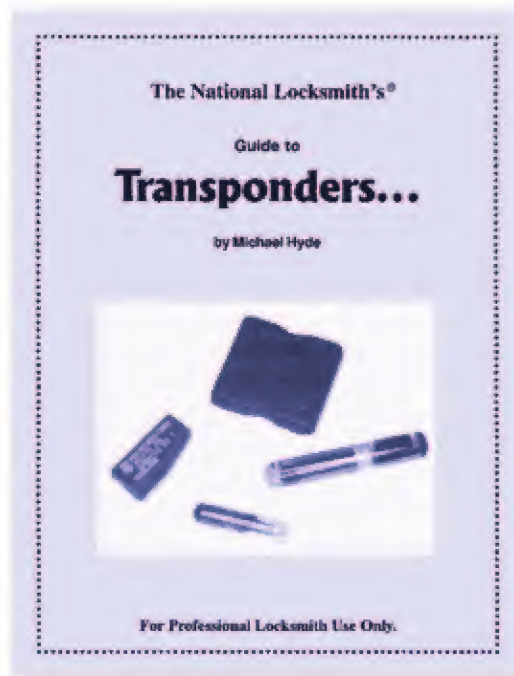
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#TS - 2001

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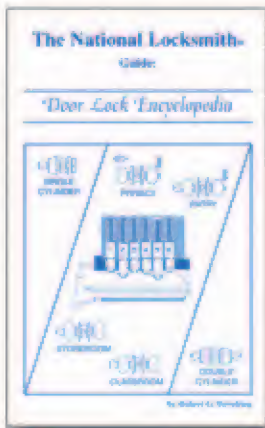
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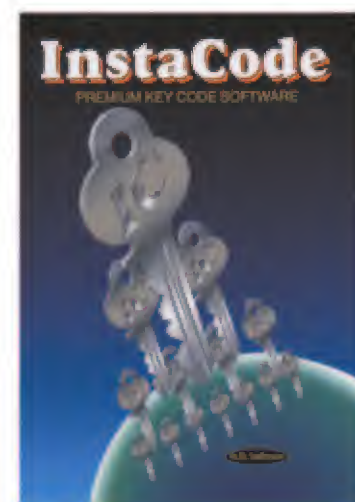


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TNL

Wafer Lock Reading



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#WLR - 1

Quick Entry

UPDATE

by
Steve
Young



1997-99 TOYOTA CAMRY

In 1997, Toyota introduced the “new” Camry. (See photograph 1.) and I have disliked it from the very beginning. The two years since then have done nothing to improve my original opinion. The new Camry is just not “locksmith friendly”. The locks are tricky to work on, the transponder system is horribly expensive and the keys are a real pain to program. It’s only logical that the Camry would also be hard to unlock.

Back in ‘97 I spent three days working on a rented Camry and was forced to come up with a special tool, the TT-1021, for unlocking the front door. I don’t “tool up” to make special tools lightly. In fact, it’s almost a last resort. I try to keep the tools in our car opening kit to a minimum. That is why the TT-1021 also unlocks the Lexus ES300, Chevrolet Venture, Oldsmobile Silhouette and the Pontiac Montana.

Almost immediately after I came out with the TT-1021 tool, I began hearing from people who had successfully unlocked by using the TT-1015 “Under-Window Tool” on the rear door. In the three days that I spent with my rented Camry, I had spent a considerable amount of time trying to use the TT-1015 on both the front door and the rear door. I had never succeeded in even getting the tool to come up on the inside of the door, much less unlocking the car with it. Naturally, I went out and tried again on another Camry. But, once again I had absolutely no luck. I continued to hear from people who were able to use the TT-1015 successfully, but I also talked to



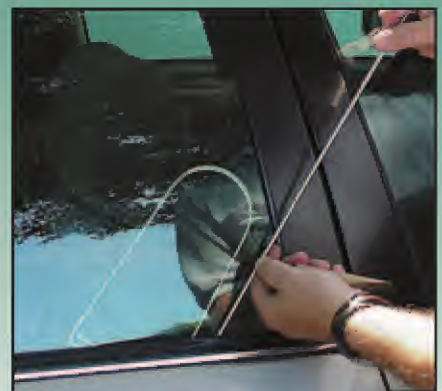
1. 1999 Toyota Camry



2. The TT-1015 tool is inserted at the forward edge of the rear door.



3. Lower the tool until the upper bend is below the base of the window glass.



4. After removing the wedges, pull the tool up along the inside of the glass.

others who had the same experiences that I did. I finally assumed that there must be two different types of Camrys out there and only some of them could be unlocked with the TT-1015 tool.

Early in July, I rented another Camry to shoot some video for the new "Jiffy-Jak Vehicle Entry system" that we introduced at the ALOA show in Cincinnati. While I had the car I disassembled both the front and rear doors to see if anything had changed, and to try to solve the mystery of why the TT-1015 only worked part of the time.

With the door panel off, I was finally able to see what was going on. The TT-1015 tool will work on all Camrys — it just has to be used with an unusual technique. The placement of the window regulator mechanism prevents the tool from being inserted into the door near the inside handle assembly. In fact, the only place that the tool can be inserted successfully is at least eight inches away from the inside door handle at the extreme forward edge of the rear door. Fortunately, the tool can be made to reach the inside lock control rocker by angling the tool sharply.

To unlock the Camry with the TT-1015 tool, begin by wedging open the base of the window as far forward as possible on the rear door. (See photograph 2.) Insert the tool into the door with the tip of the tool pointed to the rear of the car. (See photograph 3.) Once the upper bend of the tool is below the bottom of the window glass, flex and lift the tool so that the upper bend slides up the inner surface of the window glass. As soon as you are sure that the tool is in position to be pulled up on the inside of the door stop and remove the wedges from the door. It is very important to remove the wedges prior to pulling the tool up on the inside of the door. Failure to remove the wedges can result in breaking the window glass. (See photograph 4.)

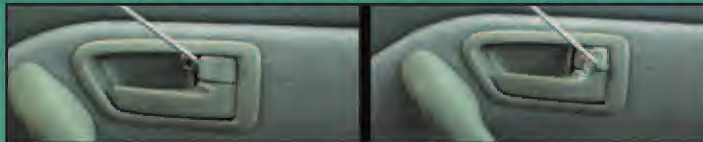
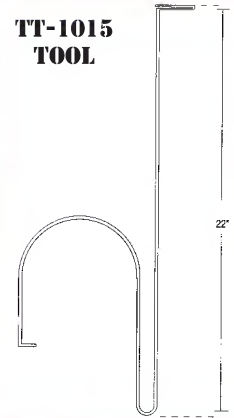
Once the tip of the tool is free of the inner weatherstripping, work the tool as far toward the rear of the door as possible. When the tool is as far back as possible, angle the tip of the tool by leaning the handle end downward toward the front of the car and then sliding the tool as deep as possible into the door. Manipulate the tip of the tool until it makes contact with the inside lock control rocker and push the rocker to the rear to unlock the door. (See photograph 5.)

148 • The National Locksmith

Quick Reference Guide

Vehicle: Toyota Camry 97-99	models Code Series: 10001-15000
Direction Of Turn: Counter clockwise (pass. side)	Code Location: Pass. side door lock
Tool: TT-1015 or Jiffy-Jak Vehicle Entry System	Key Blank: Ilso/Taylor X217, Silca TOY43, Curits/EZ TR-47
Lock System: Toyota 8-cut split-tumbler system	Bitting: Ignition & Doors: 1-8, Trunk: 1-8 plus 9, Glove Box: 5-8 plus 9 (number nine position for valet function)
Security System: Transponder system on '98 and newer LE and XLE	

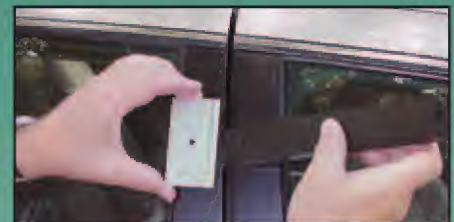
TT-1015 TOOL



5. Use the tip of the tool to operate the inside lock control rocker.



6. Place the base-plate just to the rear of the point where the tool will be inserted.



7. Insert the hooked end of the tool between the doors then seat the "heel" of the tool into the base-plate.



8. Apply pressure to the tool and then insert a wooden or rubber wedge into the gap between the door and the doorframe.



10. The rubber-tipped end of the tool can be used to operate the inside lock control rocker.



9. Duct tape is used to protect the paint at the edge of the door as the car-opening rod is inserted and used to unlock the car.



11. The tool can also be used to operate the power door lock control.

Many Toyota products are equipped with an alarm system that will relock the door as soon as you unlock it. It may be necessary to have a second person on hand to open the door at the instant that you flip the lock control rocker to the unlocked position. The alarm reacts very quickly, but the door can be unlocked over and over again. Eventually, persistence and teamwork will pay off and you will be able to open the door before it relocks.

The Toyota Camry is not the only car that has become a royal pain to unlock. The fact that it is one of the best selling cars in America however, makes it one that every locksmith will run into eventually. In addition, there are now a lot of other vehicles that are equipped with side impact air bag systems or sophisticated electronics inside of the door. For these reasons and several others, I've recently had a lot of requests for an opening tool that could eliminate the problems of going into the inner cavity of the door completely. That is why we have just introduced a new tool kit called the "Jiffy-Jak Vehicle Entry System".

The idea of wedging open the rear edge of the door and then using a long tool to unlock the vehicle is not new. In fact, many of our customers don't call us until they have already failed at the same type of thing. There have been several products designed to work by wedging an opening between the door and doorframe introduced in the past. The biggest drawback to using this approach has always been the possibility of scratching or bending the door. When properly used, the construction and usage of the new Jiffy-Jak Vehicle Entry System virtually eliminates the possibility of damage to the vehicle. The Jiffy-Jak is radically different from other tools of this kind in three important respects.

The Jiffy-Jak is machined from a "space-age" plastic that ounce for ounce is stronger than steel. This makes the Jiffy-Jak very light in weight while making it very unlikely to scratch the vehicles paint.

The Jiffy-Jak does not work by wedging the door. Instead it uses a lever system to gently pull the door away from the doorframe while applying minimal pressure to any part of the vehicle.

The Jiffy-Jak comes with a video manual that shows you exactly how to use the tool.

Now that I've had a little practice, I am able to use the Jiffy-Jak to unlock a Camry in less than a minute. In fact, on the video that comes with the tool I unlock the Camry shown in this article in exactly forty-seven seconds.


To unlock a Camry with the Jiffy-Jak, I begin by placing the rubber-coated side of the aluminum base-plate against the forward edge of the rear door at the point where I intend to place the tool. (See photograph 6.) The base-plate will act as a fulcrum for the Jiffy-Jak while spreading the pressure over a large area. This virtually eliminates the possibility of damaging the door when pressure is applied to the tool.

I then insert the hooked end of the Jiffy-Jak into the space between the front and rear doors and rotate the tool until the "heel" of the Jiffy-Jak seats into the groove in the base-plate. (See photograph 7.) Since the Jiffy-Jak is made of a revolutionary "space-age" plastic, the hooked end of the tool will not scratch the paint, yet it is strong enough to easily withstand the force needed to open a gap between the door and the doorframe. In addition, this "space-age" plastic is also self-lubricating which further reduces the possibility of damage to the car's paint.

Once the tool is properly seated, I apply pressure to the handle of the Jiffy-Jak to lever open a gap between the door and the doorframe. Because every vehicle sold in North America since the early '90s has been designed to pass rigid crash-test standards, the door and latch mechanism can easily withstand the pressure that is needed to open a gap between the door and doorframe. Once the gap is wide enough, I insert a wooden (or rubber) wedge into the opening to maintain the gap while I unlock the car. (See photograph 8.)

When the wedge is in place, the Jiffy-Jak and the base-plate are removed. If you wish, duct tape can be applied to the edge of the door, or a plastic sheet can be inserted into the gap in order to protect the painted surfaces during the opening procedure. (See photograph 9.) I then insert one of the two long-reach rods that come with the Jiffy-Jak into the opening between the door and the doorframe and flip the inside lock control rocker into the unlocked position. (See photograph 10.) Or, I can use the tool to operate the power

door lock control, which in many cases will override the relock mechanism of the alarm. (See photograph 10.) The adjustable handle that attaches to the car-opening rod makes it much easier to manipulate the tool and greatly increases your leverage. One of the car-opening rods is equipped with a rubber tip that can be used much like a finger to operate many different types of lock controls. The other rod has a forked end that can be used to grasp and lift vertical lock buttons.

The Jiffy-Jak Vehicle Entry System includes the main Jiffy-Jak, the smaller Jiffy-Jak that is used as a "helper tool" on vehicles with tight fitting doors, the base-plate, two wooden wedges, two long-reach car-opening rods, the video manual and a zipper carrying case. The smaller Jiffy-Jak can also be used by itself on some two-door vehicles or on windows that do not have a sash. The complete system gives you the tools and information that you need to be able to unlock about 80% of the vehicles on the road today. For more information on the Jiffy-Jak Vehicle Entry System stop by our web site at www.techtrainproductions.com. 

Ask Dave



CLICK HERE TO LEARN MORE



#AD - 1

Seeing is Believing

by Jake Jakubowski

1.
An excellent
borescope
offered by RQ
Associates.



2. The color
camera has
a 2X zoom
lens B-style
eyepiece
and C-
mount
coupler.



3. The
AngioLaz
VBS-1m 10
inch color
monitor
comes
complete
with built-in
150 watt
illuminator,
All that is
needed for a
complete
video system
is a light
guide and
scope.



If you do any amount of safe work (especially penetrations) you need to have at least one basic borescope. If you don't, you're in for a world of slow openings, grief and aggravation. If you don't have at least one borescope, it's almost impossible to open some safes.

The deeper you get into safe penetration, the more need you have for a scope and the more need you have for a really good, versatile scope like those offered by RQ Associates. (See photograph 1.)

I like this particular borescope very much. The RQA 12-4000 4mm x 12-inch long fore-oblique borescope has a medical-grade rod lens, which gave me a 30-degree forward viewing angle and 80 degree field of view. It has great clarity, is the perfect size and is well constructed. As soon as I received it I could not wait to use it, which was soon thereafter on a Gary safe opening that my friend Ellis Gibbs had in his shop. While Ellis penetrated the safe and lock case, I set up the scope and monitor to aid us in opening the unit.

The color camera has a 2X zoom lens B-style eyepiece and C-mount coupler. (See

photograph 2.) To monitor the insides of the safe, I used the AngioLaz VBS-1m 10-inch color monitor with built-in 150-watt illuminator, color camera with a 2X zoom lens and coupler. (See photograph 3.) Since the coupler and camera are one unit, the amount of cables needed around the job site is greatly reduced. Plus, the color camera and zoom lens helped me easily identify parts by color. This becomes especially helpful when identifying wires on the new electronic safe locks.

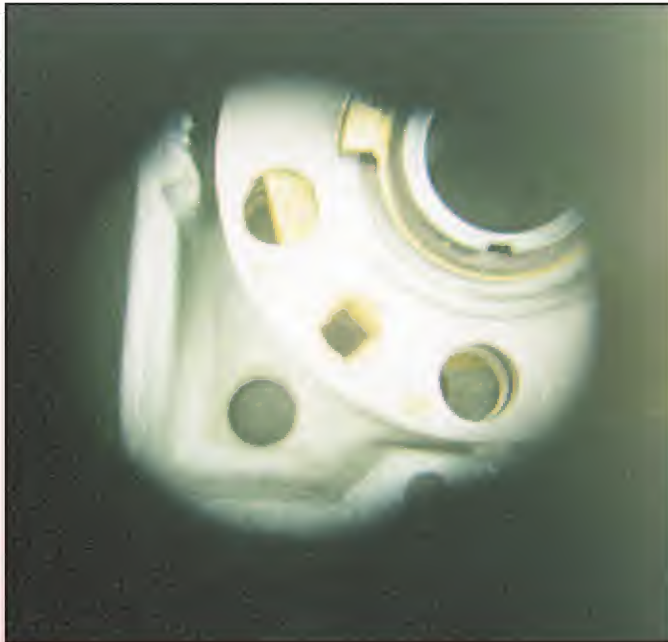
Photograph 4 is a view of the wheels in the lock case with the back cover removed so you can see the quality of this setup. As you can see, the clarity is very impressive.

On this Gary the lock was mounted VD so we opted to drill through the top and into the backside of the lock. (See photograph 5.) The scope was inserted in the lock at the position shown by the ice pick in photograph 6. Once we had a hole drilled through the top of the safe and into the end of the lock case, it was a simple matter of lining up the gates and transferring them to the drop-in.

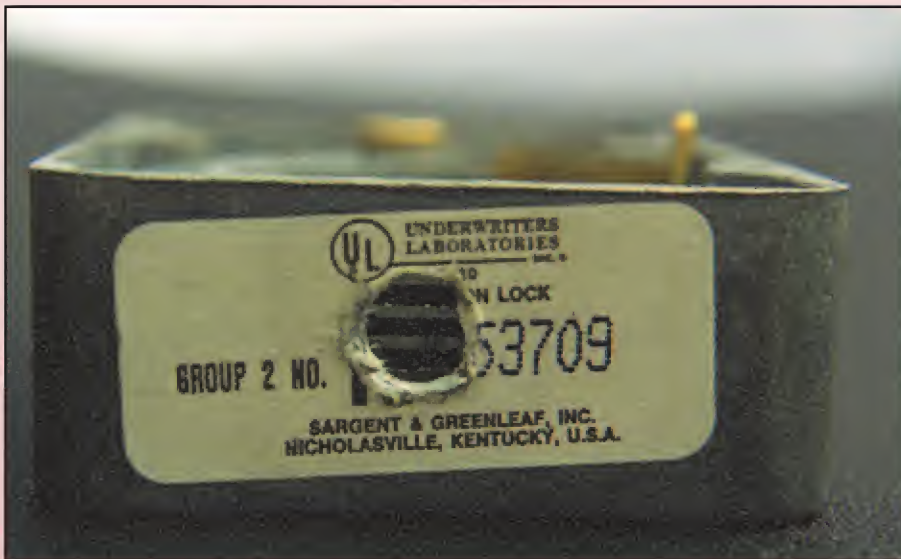
If I hadn't been stopping Ellis every ten seconds to take a photograph, this safe would

**You can
actually see
straight
ahead and to
the side at
the same
time!**

4. A view of the wheels in the lock case with the back cover removed.



5. I opted to drill through the top and into the backside of the lock.



have fallen victim to Ellis and the RQA scope, camera and monitor in about fifteen minutes or less. Even though this scope is not considered long enough for a top or side penetration viewing on most safes, this particular Gary was "short" enough to allow us to view the lock case from the top.

Dave McOmie once referred to this RQA scope as his "favorite". I can see why. You can actually see straight ahead and to the side at the same time! Personally, I wouldn't want to go on another safe opening without having this unit around to speed up the opening.

After opening the Gary safe a call to open a Cincinnati safe sounded routine enough. I thought I would be able to top drill this one as well and avoid the hardplate. Of course, assumptions always get you into an interesting situation. This particular Cincinnati safe was set into a poured concrete jacket and was bolted to the floor. It had nearly a foot of concrete poured around both sides, the back and top. Nobody was going to "snatch" this safe out of the store with a chain and four-wheel drive pickup truck.

I opted to drill through the front of the unit and scope the wheel pack.

Photograph 7 shows where I drilled into the lock case to come in just behind the lever and slightly to the side of the fence. Now if you happen to think that the hole looks rather large, it is a 5/16". I drilled the larger hole to allow me a little wiggle room for manipulating the scope. Remember, the RQA is a fixed focus and although it has a broad field of view, the wheels were nearly 90 degrees to the right of my hole.

As you can see the hole I drilled was dead-on the money, allowing me to scope the wheels, line up the gates and let the fence drop in, with only a slight angle on the scope so I could see the gates.

The next safe I took the RQA scope and monitor on was at a fast food restaurant where the safe was not encased in concrete, but was built into the wall with the "back" of the safe in the training room and only about three inches of the front of the safe sticking into the office proper. The walls were standard 2x4 and wallboard construction and the face of the safe was neatly trimmed with finish molding! I mentioned to the store manager that I had not seen a safe installed like that before and he said it was done to save space in the office.

After looking over the safe from both the office and the training room, I decided to see if I could drill a hole through the



6. The scope was inserted in the lock at the position shown by the ice pick.

7. I drilled into the lock case to come in just behind the lever and slightly to the side of the fence.



side of the safe and scope the change key hole. I knew I couldn't manage to scope the hole and manipulate the dial, so I called on a friend to come down and give me a hand. While I was waiting for Jerry to show up, I set up the RQA and AngioLaz VBS-1 monitor and drilled my hole in the side of the safe on an angle that I calculated would put me pretty close to the change key hole.


By the time Jerry arrived, I had everything ready to go and with Jerry working the dial and me watching the monitor and a whole lot of shouting back and forth through the wall, we got that sucker open!

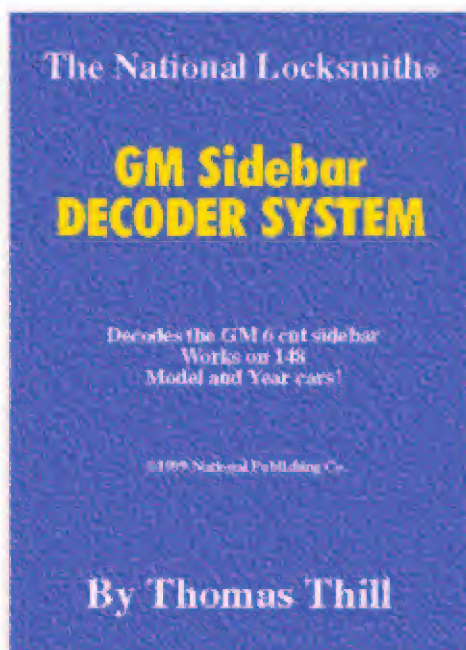
I won't say this last opening was the easiest opening I ever did on a safe, but I will say it was a good, clean opening. And, it was all made possible by the

scope and monitor that I was using.

O.K., there you have three different opening procedures, all of which were made possible by using the RQA scope and AngioLaz monitor. I can't even imagine what these safe openings would have been like without having the use of a good borescope. Quite frankly, I probably would have not even attempted or accepted the jobs, and what a loss that would have been.

I've found the RQA scope to be a very versatile, useful and necessary tool. Couple it with the camera attachment and AngioLaz monitor and you've got a safe opening aid that's hard to beat. Believe me, seeing really is believing!

For more information on the RQ Associates scope, camera attachment and AngioLaz VBS-1 color monitor, call: (734) 671-2359, and tell 'em: "Jake told me to call!" 



GM Sidebar Lock Decoder System

Tom Thill, the author of a new book, has invented an amazing new way to make keys for six cut GM Sidebar Locks.

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#TT - 1

Shake, and Rattle Pound!

by Mike Griffin

Being one of Liberty's largest distributors specializing in safes and safe openings, as well as being members of SAVTA and NSO, gives us the opportunity to open not only high security safes, but also gun safes in much larger numbers than most lock shops would open in years.

Lockouts can be caused by factory defects, human error, incorrectly set combinations, lock malfunctions or dropped containers. I am going to cover one of the most common problems that causes a lock-out, and how to open the safe without drilling.

The gun safe is a Freedom Safe Model FG22, manufactured by Liberty. The lockout on this safe was caused by having a load bar placed on the box directly on the dial (see photograph 1). You can see the black strip along the side of the box, which happens to be in line with the dial.

I removed the box and wrapper and noticed wear on wrapper as well as on safes right hand side. Next, I dialed the combo in and felt the lever drop. Everything felt normal, however there was very little retraction of the bolt. An internal relock trigger had obviously been fired.

Due to lack of damage on front of the dial, as well as the safe, my determination was that only the internal relocker has been set off and not the external relock device (see photograph 2).

This situation was remedied by applying Styrofoam around the dial, and by using a block of wood and hammer with normal pounding (as demonstrated by apprentice safecracker Sherri), vibrate the locks back



You can see the black strip along the side of the box, which happens to be in line with the dial.

Only the internal relocker has been set off and not the external relock device.



into place, gradually disengaging the internal relocker. Care must be taken so as not to damage the new thin outer layer of the composite door, as well as the paint (see photograph 3).

After 15 minutes of pounding the door with no results, (this usually works within a matter of minutes, but not this time) the next troubleshooting technique tried was to jiggle and shake the handle back and forth, as this will put vibration onto the lock itself. Presto! The internal relock trigger disengaged and the safe opened (see photograph 4).

After talking with Jay Crosby, Engineering Manager at Liberty, I was advised that this trigger plate system will soon be replaced with a harder to trigger system. But there are literally thousands of gun safes with this existing trigger plate system in them.

Most of the time external relock devices are not set off, however, on severe cases, such as being dropped on it's face or back, I have had both the internal relock trigger and external relock device fired. This requires two holes to be drilled to neutralize.

Photograph 5, shows the lock case and relock device retaining plate disassembled.

To repair the safe, I only needed to tighten the right hand lock case cover screw.

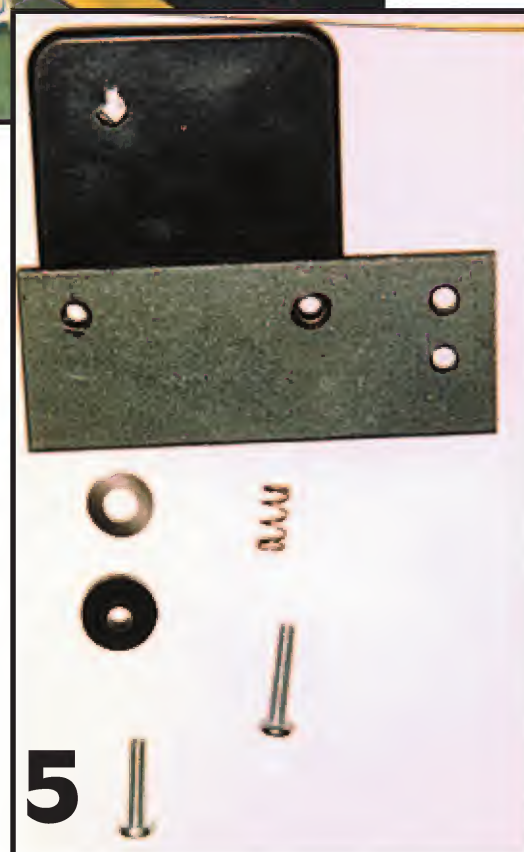
A fired relock trigger is usually not an everyday occurrence, however, you will encounter them. The almost sure way to identify a fired relock trigger (a relock trigger is inside the lock. A relock device is outside the lock case) is the combination will dial, the lever will drop-in, but the bolt will not retract. Bolt pressure can also cause these characteristics, so you will need to determine for sure that it is a fired relock trigger, or you will be drilling a hole for nothing. **TNL**



Vibrate the locks back into place, gradually disengaging the internal relocker.



The internal relocker disengaged and the safe opened.



The lock case and relock device retaining plate disassembled.

**Taking
Industry Products
for a**

**TEST
DRIVE!**

Safe Buster by Keedex



When was the last time you tried to drill you way through a tough piece of hardplate by hand? If it's been a while, then you either don't do safe openings or you got smart and purchased some form of drilling aid. If it hasn't been that long ago since you tried to use brut force to punch your way through hardplate, then you definitely need a drilling aid.

There are several devices available to ease the pain of drilling a diabolical piece of hardplate. One such device is available from Keedex called the "Safe Buster." It is designed to greatly increase the drilling pressure that can be applied to the drill bit when compared to drilling by hand. The increased pressure will reduce drilling time and fatigue. I can tell you, it sure beats drilling by hand.

DESIGN:

The Safe Buster is comprised of five primary components: The pressure bar, drill motor collar, pivot pins, S-hook and chain. The pressure bar is 30" long and has several position holes to attach both the drill motor and chain. The unit comes with two drill motor collars that will fit just about any drill you may have.

There are a number of variations of this same lever rig design, but Keedex's is by far the easiest, most affordable, and in some ways the most versatile available.

HOW IT WORKS:

First select the drill motor collar that fits your drill. The collar is comprised of two steel half moon collets that is secured by two screws. The drill motor is then placed in the pressure bar ring and secured by the two pivot pins.

The end of the pressure bar is then attached to a chain by an S-hook. The other end of the chain is then attached to either the safe handle or a drilled and tapped eyebolt. In this manner and incredible amount of pressure can be applied to the drill motor.

When drilling hardplate, increased drilling pressure offers many advantages. For one, the increased pressure causes greater friction between the drill bit and hardplate turning it red-hot. This softens the hardplate metal and allows the drill bit to dig into, or cut, the material. Some hardplates are so hard that without added drilling pressure the drill bit will simply spin on the surface, barely scratching it.

The Safe Buster will also greatly reduce personal fatigue by allowing the safe tech to accomplish more by doing less. With half the effort, many times more pressure (by virtue of the tools design) can be applied. A faster drill will ultimately result in less time on the job.

PRICE:

Suggested retail price for the Safe Buster is \$153.46. It is the least expensive in its class.

CONCLUSION:

The Keedex Safe Buster is definitely a handy tool that for those still fighting it by hand would greatly appreciate. The drill motor collar design is nice because it allows easy removal, allowing the drill to be used for other applications without interference of bulky motor brackets.

The only line of criticism I can make is in the fixed length. If you find yourself in tight quarters without enough room to adequately utilize the Safe Buster, you are back to drilling by hand.

Because of the solid flat bar design, it does not allow for a collapsible handle that would offer greater flexibility.

For more information on the Safe Buster contact:

Keedex, Inc.

12931 Shackelford Lane

Garden Grove, CA 92841

Phone: (714) 636-5657

Fax: (714) 636-5680

E-mail: info@keedex.com

Web: <http://www.keedex.com>

Circle 283 on Rapid Reply. 

IN SUMMARY:

The Safe Buster by Keedex is designed to greatly increase the drilling pressure.

PRICE: \$153.46

COMMENTS: Because of the solid flat bar design, it does not allow for a collapsible handle.

TEST DRIVE RESULTS: The Keedex Safe Buster is definitely a handy tool that those still fighting it by hand would greatly appreciate.